

Federal rules tax enterprises

Many companies are unprepared for the electronic discovery requirements that went into effect Dec. 1. **PAGE 16.**



**TELECOM
EXPENSE
MANAGEMENT
COMPANIES
TO WATCH**

Part 2 of our look at telecom expense management firms. **PAGE 34.**

Inside Vyatta

CEO Kelly Herrell and Chief Strategist Dave Roberts sit down for a Q&A session about their open source router company and the buzz it's generating. **PAGE 28.**

NETWORKWORLD

The leader in network knowledge ■ www.networkworld.com

December 4, 2006 ■ Volume 23, Number 47

**NETWORKWORLD
CLEAR CHOICE**

ConSentry edges Nevis in test of in-line NAC appliances. Page 58.

**CLEAR
CHOICE
TESTS**

► ConSentry's LANShield controller is an in-line firewall with NAC functionality.

HP, Symantec score high in test of storage resource management. Page 64.



Cisco looks to ease VPN deployments

Simpler site-to-site VPNs, higher WAN performance and other features are on tap.

BY PHIL HOCHMUTH

Cisco this week is expected to introduce VPN technology that could help businesses with fast-growing branch-office deployments more quickly set up and maintain secure WAN links.

The company plans to introduce, as part of a larger announcement (see related story, page 10), what it calls Group Encryption Transport (GET) with a new version of its IOS switch/routing software. GET will let customers work together in a site-to-site VPN more easily than with Cisco's current site-to-site VPN technology, which is based on IPSec tunneling, experts say. (For more on other new IOS features, go to www.nwdocfinder.com/6378.) AT&T

also is expected to launch a GET-based enhancement to its MPLS-based IP VPN services, so that traffic on an IP VPN link could be encrypted as a further security measure, Cisco and AT&T say.

In a GET VPN, Cisco branch-office routers are configured as part of a group, in which members are authorized to exchange encrypted traffic flows. A centralized key server — a specially configured router — distributes the encryption keys to each GET member via a protocol called Group Domain of Interpretation (GDOI), defined by IETF RFC 3547 (www.nwdocfinder.com/6361).

GDOI coordinates group membership and creates a common encryption infrastructure using a method called multicast rekeying. This technique uses IP multicast to distribute IPSec security associations, keys and policies to group members. That process allows secure traffic connections over the Internet. IPSec

See Cisco, page 10

Before they were gurus

Consultants, analysts share old war stories.

BY DENISE DUBIE

In the IT department at Indiana University, Joe Skorupa quickly learned he wasn't there to put technology in place just for the fun of it.

"I knew the guy selling the alumni their tickets to basketball games could have had me fired on a dime if his systems weren't working," says Skorupa of his first IT gig some 20-plus years ago. "If

the alumni didn't get their tickets, the university didn't get millions of dollars in donations. In the real world, there are business values attached to the technology."

Skorupa today is a research vice president covering network and communications equipment at Gartner. He values the lessons he learned early in his career, as do many other industry analysts and

See Consultants, page 32



Pescatore

Online extras: www.nwdocfinder.com/6359

- **Audio:** Analysts reminisce about their days in IT departments.
- **Q&A** with Gartner security guru John Pescatore.
- **Notable quotes** from IT pros turned analysts.

Vista not the only call for Microsoft shops

BY JOHN FONTANA

The hard part is over: Microsoft officially rolled out the Vista client operating system last week; now it must persuade users, who have more desktop options with Linux and Apple OS X, that the operating system is the way to go.

And Vista, which has been in development for five years, isn't the only decision on the table for corporate IT. Microsoft also shipped Office 2007 and announced a faux-launch of Exchange

2007, which is slated to be generally available early this month.

Together these products offer a formidable trio of software upgrade decisions that will require careful consideration. It is the first time in 11 years that Microsoft's flagship products, which still generate more than 90% of the company's revenue, have been shipped simultaneously, going back to Windows 95 and Office 95.

At that time, the Rolling Stones' **See Vista, page 14**



YourTake



Scott Pinkerton, communications infrastructure department manager at Argonne National Laboratory, on:

structure department manager at Argonne National Laboratory, on:

- How Argonne went from failing to acing security audits.
- Getting creative with intrusion-detection systems.
- Worrying about personally identifiable information.

Page 30

EXCHANGE THE FEW



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Microsoft
Exchange Server 2007



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NETWORKWORLD

12.4.06

Network Infrastructure

- 10** Cisco to bolster video portfolio.
- 10** Cisco boosts router connectivity options.
- 12** Users end year with security changes.
- 20** F-Secure takes aim at rootkits.
- 22** Shaklee goes outsourcing route.
- 24** 3Com buys out Huawei joint venture.
- 24** WatchGuard puts high-end security in low-end boxes.
- 24** Symantec acquires Revivio's IP assets.
- 28** Vyatta: No open source guru required.
- 30** How Argonne Labs did an about-face on cybersecurity.
- 36 Kevin Tolly:** Living in the post e-mail world.
- 42 Face-off:** Is image-based spam a nightmare facing enterprise networks?
- 76** New research reveals more details about the Antikythera Mechanism.
- 76** McAfee to provide total protection for corporations.
- 78 Opinion: 'Net Buzz:** 'Gates for president' bandwagon picks up.

Enterprise Computing

- 16** Azul to release 48-core processor.
- 20** HP cools data center servers.



COOLTOOLS

Treo 680, by Palm and Cingular, lets users make calls from six continents and more than 190 countries. **Page 40.**

56 Opinion: On Technology: Managing the virtual world.

78 Opinion: Back Spin: Hell yes to virtualization!

Application Services

- 14** Mary Kay putting on a SharePoint face.
- 16** New e-records rules: who's complying?
- 20** CA, Novell set to manage virtual servers.
- 36 Scott Bradner:** Copyright law: Small changes.
- 57 Opinion: Jeff Kaplan:** On-demand services set to take off in 2007.

Service Providers

- 18 Johna Till Johnson:** Structuring

your telecom sales strategy.

34 Companies tackle telecom expenses.

57 Opinion: Thomas Nolle: Can T-Mobile launch an FMC arms race?

Tech Update

39 Making wide-area file services secure.

39 Ask Dr. Internet.

40 Mark Gibbs: Capsa captures and cooks net comms.

40 Keith Shaw: Cool tools, gizmos and other neat stuff.



Management and Careers

68 Tech execs lengthen tenure: Today's CIOs, like Tom Shelman, are sticking around longer because they contribute to the business.

8 Networkworld.com: Catch up on the latest online forums, blogs, newsletters, videos and help desk queries.

Newsbits

Gates Foundation expands digital-divide initiative

The Bill & Melinda Gates Foundation last week announced a \$328 million plan to provide computer and Internet services through public libraries in developing nations. Botswana, Latvia and Lithuania won the first round of grants, a total of \$17.5 million. The grants are aimed at creating opportunities for people in the developing world to access the Internet. A portion of the funds will be set aside for IT training programs. The initiative comes amid heightened sensitivity to the need to bridge the digital divide in developing nations. A number of companies and groups are working to provide low-cost IT products and Internet access to poor areas of the world, including the One Laptop Per Child Group led by Nicholas Negroponte, a co-founder of the Massachusetts Institute of Technology Media Laboratory; Via Technologies, which is building solar-powered computer centers; and Intel, which has pledged \$1 billion over five years for computers and Internet access.

U.S. agency recommends e-voting paper trail

■ The National Institute of Standards and Technology has recommended that the U.S. government require touch-screen electronic voting machines to include independent audit technology, such as printouts. "The lack of an independent audit capability in systems is one of the main reasons behind continued questions about voting-system security and diminished public confidence in elections," says a NIST paper released this month. "In practical terms the software-dependent approach cannot be made secure or highly reliable."

The Technical Guidelines Development Committee of the U.S. Elections Assistance Commission is scheduled to review NIST's recommendation at a meeting Monday and Tuesday.

IBM wins data center consolidation contract

■ IBM announced last week that it won a seven-year, \$863 million contract to consolidate the Texas state government's 31 data centers into two facilities in San Angelo and Austin. The project will take two years and is projected to save Texas \$25 million in 2008 and

See News Briefs, page 6

Clear Choice Test:

Start-ups ConSentry and Nevis offer new appliances for enterprise network access control. **Page 58.**



■ ConSentry's LANShield controller is an in-line firewall with NAC functionality.



Clear Choice Test:

HP's Storage Essentials Enterprise Edition and the Veritas CommandCentral Storage 4.3 from Symantec

score high in our test of storage resource management wares. **Page 64.**

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Newsbits

News Briefs

continued from page 5

2009 and \$159 million over the base contract period, IBM and the Texas Department of Information Resources said. IBM will run the contract and provide mainframe and server consolidation and IT operations. Contract partners Unisys will provide facilities management and data-center operations. Xerox will provide print management and operations, and Pitney Bowes will provide mail services. AT&T and Dell also are part of the contract, offering hardware, software, and change and risk-management services. IBM said it would meld the data centers into an existing 13,000-square-foot data center in San Angelo and a 36,000-square-foot data center it is creating in Austin.

Watchdog: Verizon, Alltel tops

■ Just in time for the holidays *Consumer Reports* is scheduled to release new ratings of the biggest wireless service providers across the country. The magazine says it will publish in its Dec. 4 issue a story that names Verizon as tops in customer satisfaction in most cities surveyed, with Cingular and Sprint getting the lowest ratings. The publication says that 43,000 wireless subscribers in 20 markets participated in surveys used to create the ratings. While not a surprise to anyone who has used a cell phone for any length of time, call quality is still an issue for many consumers. Fifty-four percent of respondents who switched carriers in the past three years say poor call quality fueled the switch, according to the surveys. Only 33% say they switched for lower rates. One interesting fact, according to the publication, is that the relatively small wireless service provider Alltel ranked well in the cities where it offered service. Alltel is considered a regional, rather than national wireless service provider.

Business Objects to acquire Nsite

■ Business Objects plans to acquire Nsite Software, which develops a software-as-a-service delivery platform, in a move to offer more of its own products over the Internet, the companies announced. Business Objects said it will integrate some of Nsite's software-as-a-service technologies into its own product line, allowing it to release more of its business-intelligence software in the form of services next year. Financial terms of the acquisition were not disclosed. The move follows growing interest in software-as-a-service, which requires users to have only an Internet connection and little or no software installed locally. The goal is to reduce the cost of deploying and maintaining applications. Nsite sells a product called On Demand Enterprise, used by companies to develop applications that can be accessed over the Web through a browser. It also offers Application Center, a library of programs for delivering over the Internet, called Application Center, which includes software for tasks such as channel management, quotes and sales. It also offers tools for building and customizing software-as-a-service applications.

Storage spending rises

■ Companies are reaching deeper into their pockets to add data storage capacity to their computer networks, according to an industry report released last week. Worldwide revenue for external disk storage systems rose to \$4.3 billion in the third quarter of 2006, a 9.9% increase compared with the same period last year, according to IDC. This is the 14th consecutive quarter of storage revenue growth, a trend IDC attributes to more companies buying storage because of the demand to save more data, and to existing customers buying larger capacity systems. While the cost per megabyte of storage has continued to decline, the average selling price of systems has continued to rise, because enterprises are buying larger capacity storage. The market share rankings of the top storage vendors were unchanged in the latest report. EMC kept the No. 1 spot, with a 21.4% share on an 18% increase in revenue over the year-ago quarter to \$927 million. HP ranked second, with a 17.6% share on just 1.8% revenue increase to \$760 million.

{quote of the week}
{quote of the week}
{quote of the week}

"What are we doing about Vista? In one word: Apple."

Jim Tieri, director of IT for Holland Co. a Crete, Ill., manufacturer of railway welding and maintenance equipment

See story page 1

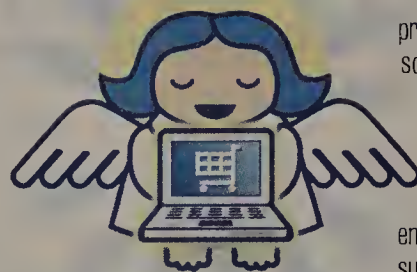
Gov't extends VeriSign contract

■ The Department of Commerce has approved an agreement for VeriSign to continue to operate the .com domain for six more years, despite objections about pricing and security. The agreement was submitted by the Internet Corporation for Assigned Names and Numbers, the nonprofit organization that oversees the Internet's technical infrastructure, VeriSign announced last week. The current .com contract expires in late 2007. The approval comes even though domain-name registrar GoDaddy.com in September criticized the deal, saying it should include infrastructure build-out requirements and make the company justify built-in price increases. Also in September, registrar Network Solutions released a report saying ICANN has failed to address security in its latest proposals for the .com, .biz, .info and .org top-level domains. A Network Solutions official said the company was disappointed that the Commerce Department approved the agreement "in the face of widespread opposition."

Alcatel-Lucent deal closes

■ Alcatel-Lucent, a global communications giant with combined annual revenue of more than \$24 billion, officially debuted last week after a sometimes rocky engagement between the two companies. The deal closed Thursday, about eight months after it was announced and following national security concerns, investor lawsuits and a close shareholder vote. On Friday, the company began trading on the Euronext Paris exchange and the New York Stock

TheGoodTheBadTheUgly



< **Shopping heaven.** Online retailers proved able to deliver the goods on Nov. 27, which some call Cyber-Monday in recognition that it is perhaps the busiest online shopping day of the year. Keynote Competitive Research, which watches Web site performance, said shoppers suffered few of the performance problems they experienced on the day after Thanksgiving, when retailers such as Wal-Mart struggled to keep up with online consumers.

Leveling criticism at Level 3. Level 3's buying binge elicited this comment from Victor Schnee, president of consultancy Probe Financial Associates: "They haven't been able to build anything resembling a real business on their own, so it makes sense that they would try to buy one through acquisitions."

Cell phone lost and found. Where's the best place to look for a lost mobile device? Maybe a taxi cab. A survey issued by a mobile security company last week revealed that during the past six months nearly 12,000 electronic devices were left in cabs in the San Francisco-Oakland Bay (3,106 devices) and Washington, D.C.-Baltimore (8,701 devices) areas.

Exchange under the ticker symbol ALU. Both companies were among the largest suppliers of wired and wireless infrastructure, and the combined entity boasts impressive statistics: 79,000 employees in 130 countries, about 23,000 of whom work in R&D, a services team of more than 18,000 and customer relationships with the 100 largest service providers in the world. The consolidation comes as carriers, the consumers of telecom gear, also combine into fewer and bigger entities.

CERT issues terrorism alert

■ The Computer Emergency Readiness Team has warned U.S. banks and financial institutions of a threatened cyberattack by Al-Qaeda terrorists. The group called on allies to attack the Web sites of U.S. financial institutions in December in retaliation for the United States holding suspected terrorists at the Guantanamo Bay, Cuba, prison camp, according to a U.S. government source. CERT, part of the Department of Homeland Security, sent out the alert Thursday, but it has "no information to collaborate the threat," said Joanna Gonzalez, a DHS spokeswoman. The alert was "really sent out of an abundance of caution," she added. Such alerts are "not uncommon," Gonzalez said, although she declined to give details about how often CERT issues alerts. Asked whether Al-Qaeda has the ability to carry out such a threat, Gonzalez said she didn't have that information.

COMPENDIUM

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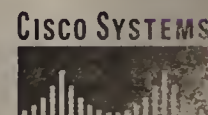


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■ **Commenting on articles.**

We've rolled out our new commenting system — so now you can post your thoughts on almost every article on NetworkWorld.com. When you scroll to the bottom of some pages, you'll see a box that either lets you start a discussion or jump into one.

■ **The ancient Greek calculator.**

We've done a couple of stories on the Antikythera Mechanism. Andrew Ramsey, part of the team who investigated the device, blogged from a conference in Greece on the calculator for us: "As a dedicated solar eclipse chaser myself, I can understand the ancients' fascination with these phenomena, so to find out that this Mechanism's primary role was to predict both solar and lunar eclipses was a wonderful revelation."

www.nwdocfinder.com/6345

■ **Security, storage consolidation.**

The news that Symantec is buying the assets of data-protection vendor Revivio gets one user wondering who's next: "Mimosa, Mendocino, Timespring?"

www.nwdocfinder.com/6346

■ **Desktop spam filtering.**

A blog post by News Editor Paul McNamara on Yet Another Antispam Service gets readers discussing their own personal antispam techniques. Some argue for the delete key; others say that's absurd.

www.nwdocfinder.com/6347

■ **CCIE.**

Michael Clark got his CCIE in 1998 and reports on its difficulty: "If you want it, go for it. Expect to work hard and keep trying. Even in the attempt you will learn something and be more confident and competent in your chosen career — and isn't that point?"

www.nwdocfinder.com/6376

■ **Microsoft, Novell and Linux.**

Jump into the debate. Imric concludes an analysis: "As for running Linux on Windows, why would anybody do that? Seriously, it's the worst of both worlds."

www.nwdocfinder.com/6377

FOLLOW THESE LINKS TO MORE RESOURCES ONLINE

BLOGOSPHERE

Bill Gates for president?

Plus: Google's menu and the downside of rebates.

Gates for president? There is a movement, of sorts, to elect Bill Gates president of the United States — or at least, there's a Web site. And now Dilbert comic strip creator Scott Adams has thrown his support behind the idea. Paul McNamara investigates in Buzzblog. www.nwdocfinder.com/6370

Eat at Google's. Layer 8 this week salivates over Google's cafeteria menu. The food at the company's gigantic New York headquarters sounds, well, scrumptious. Its inaugural menu includes "Beef Bourguignon, Braised Mangalore Salmon in Coconut Milk, Wild Striped Bass en Papillote, Beetroot-Marinated Tofu With Chile Scallion Glaze and much more." www.nwdocfinder.com/6371

Run from rebates. Lab Alliance member James Gaskin writes: "Don't get suckered while doing your Christmas or end-of-year tax-writeoff shopping this December: avoid rebates. The price

tempts you, but realize your chance of getting your rebate money is far lower than you think." He points to another column, a Dilbert cartoon and a series he wrote on problems getting a rebate from Dell. www.nwdocfinder.com/6372

Wow, an 80386 for \$2,600! Jason Meserve takes a trip down memory lane, when memory cost \$800 for 2MB. He links to an old Radio Shack ad for a 16MHz system that's "OS/2 ready." Just \$2,599. www.nwdocfinder.com/6373

Lower power consumption is hot.

Executive Online Editor Adam Gaffin looks at a post on data-center cooling and power requirements by Intel's Bradley Ellison, who acknowledges a debate within Intel among chip designers on the need for lower-powered chips and speed, but adds the company is trying to reduce chip power requirements. www.nwdocfinder.com/6374

ITVVIDEO

Hot Seat interviews, the coolest tools, and more



Hot Seat: Protect your data!
NetApp's

Manish Goel discusses how the company's data protection and retention systems can keep the learning curve and maintenance requirements low. www.nwdocfinder.com/6367



Cool Tools: A look at the Treo 680. With Keith

Shaw feeling under the weather, Jason Meserve fills in with a quick report on the new Treo 680 device, available for Cingular customers. www.nwdocfinder.com/6368



Twisted pair: On the road again...
Jason and

Keith check in from the IT Roadmap tour in San Francisco and chat about Cyber Monday/Black Friday hits and misses, plus a possible Mozilla Firefox browser flaw. www.nwdocfinder.com/6369



Find the answers to these prickly problems online.

■ **This week:** Getting out of a dead-end job.

Ron Nutter helps a user decide which certifications to pursue to get out of a dead-end job.
Help desk response:
www.nwdocfinder.com/6348

Robin Gareiss looks at how to structure support for remote offices.
Help desk response:
www.nwdocfinder.com/6349

Columnist Dave Kearns ponders the future of NetWare.
Help desk response:
www.nwdocfinder.com/6350

Storage newsletter author Mike Karp looks at the growing SMB storage market.
Help desk response:
www.nwdocfinder.com/6351



BEST OF NW'S NEWSLETTERS

Mobile security lags compliance efforts

Plus: The Microsoft Vista Hype Machine in full gear.

Wireless in the enterprise:

There is a frightening lag between organizations' zeal to use mobile devices and their ability to deploy them in a way that complies with regulatory security mandates. Business managers are pointing the finger at IT, while IT is pointing right back.

www.nwdocfinder.com/6352

Unified communications:

Unified messaging offers the potential for significant gains in user productivity and reduced IT investments in managing disparate elements of corporate infrastructure. However, Analyst Michael Osterman notes that employing a unified messaging system presents some potential difficulties.

www.nwdocfinder.com/6353

Small business technology:

The Microsoft Vista Hype Machine has been running at high gear since Vista's release on Nov. 30 for businesses with license agreements and will peak again in Jan. 30 for the consumer release. Should you succumb and try to upgrade to Vista now?

www.nwdocfinder.com/6354

Network optimization:

Blue Cross and Blue Shield of Kansas City went shopping for an application layer firewall and purchased a product that helped it reduce page-load times by 96% on its Web site — while staying compliant with HIPAA.

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Cisco

continued from page 1

security associations in a GET VPN are timed to expire after a designated period. Periodically, the key server pushes new keys to the group-member routers via multicast — or multicast rekeying — before the security associations expire on the routers.

Members of a GET group essentially are IP multicast group members, but they exchange IPSec encryption key data, letting them communicate securely over an untrusted network.

In traditional site-to-site VPN tunnel setups, IPSec VPN tunnels are established and maintained among sites, creating a secure hub-and-spoke network laid on

top of the public routed Internet. This makes large VPNs hard to set up and limits the traffic paths, because all devices and paths must be predefined, technology watchers say.

"In a large, fully meshed VPN, you have to tell each endpoint where the other endpoints are and build a lot of routes," says Zeus Kerravala, an analyst with Yankee Group. "Then there is a whole routing table that gets built underneath. It's not the simplest thing to manage. It's not as easy as it should be."

Cisco says a GET VPN lets customers use the basic, routed Internet infrastructure without the VPN tunnel overlay. "We describe [GET VPN] as routing the way you know and love — just encrypted — but with all the efficiencies built into the routed network," says Inbar Lasser-Raab, a product marketing director at Cisco. "If customers are using a hub-and-spoke, they will see an improvement in latency because they're just using a routed network."

Cisco is not saying how much the improvement is. Although it has collected data on latency and performance differences between its own IPSec tunnel and GETVPN technologies, the company is not releasing the data. The IOS release that contains GET is Version 12.4(11)T, and will operate on Cisco's 1800, 2800 and 3800 series, branch-office Integrated Services Routers, as well as on the Cisco 7200 and 7300 series WAN-aggregation routers.

VPN dynamics

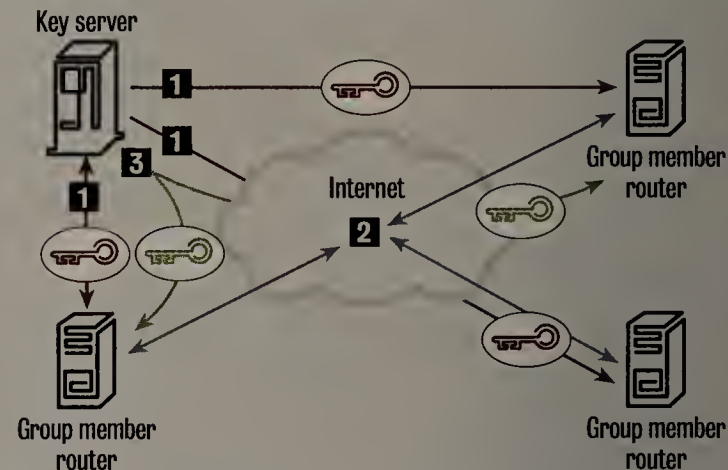
Cisco and other vendors, such as Juniper and Check Point, have technologies that can make setting up IPSec VPN tunnels more dynamic and that emulate fully meshed networks where nodes have direct links to each other. Cisco, for example, has Dynamic Multipoint VPN (DMVPN), an IOS feature that lets routers in hub-and-spoke IPSec VPNs set up tunnels between spokes dynamically. "[DMVPN] helps bypass the hub-and-spoke [topology] and creates more of a mesh," says Robert Whiteley, a senior analyst at Forrester Research. "It gives you a more automated setup of tunnels, but it doesn't bypass the overall problem. . . . You still have to physically say, here is the network topology."

Whiteley says a GET VPN would

See Cisco, page 12

Cisco's GET VPN topology

A new IOS feature lets Cisco routers be set up in multi-path, full-mesh VPN configurations without the establishment of stateful IPSec VPN tunnels, the company says.



- 1 Group members register with the key server. The key server authenticates and authorizes the members and downloads the IPSec policy and keys that are necessary for them to encrypt and decrypt IP multicast packets.
- 2 Group members exchange IP multicast packets that are encrypted using IPSec.
- 3 As needed, the key server pushes a rekey message to the group members that contains new IPSec policy and keys to use when old IPSec security associations expire. Rekey messages are sent in advance of the security associations expiration time to ensure that valid group keys are always available.

Cisco boosts connectivity

Cisco is expected to announce new hardware modules for its Integrated Services Router line that add network management and monitoring, as well as connectivity options, such as cable broadband, DSL and metro Ethernet.

The new modules for the ISR 1800, 2800 and 3800 series routers are a Network Analysis Module (NAM) and WAN interface cards that support cable modem, metro Ethernet and high-bit-rate DSL links. An upgrade to the ISR Services Engine blades, used for various add-on features such as VoIP and content networking, also is planned.

The NAM card for the ISR provides the same features as the NAM card previously available for the Catalyst 6500 switch — real-time traffic monitoring, packet capture tools, and inspection of capabilities for individual user and application flows, using Cisco's NetFlow network management and analysis technology.

"The NAM module replaces having to run around with a sniffer to collect data about traffic patterns," says Zeus Kerravala, an analyst with Yankee Group.

The previous NAM module was able only to provide traffic analysis for LAN or campus networks where a NAM-enabled Catalyst 6500 switch was operating. Putting a NAM blade into a branch-office router could help businesses get a better handle on traffic problems and troubleshooting for the WAN, he adds.

The Services Engine card for the ISR series is an Intel-based Linux blade appliance that runs extra services on top of the router's basic WAN routing and security functions. The new blade has an upgraded processor and software that more than doubles the performance of the previous, according to Cisco. The new Services Engine hardware and software provides as much as 100Mbps of throughput for traffic for the various services that can run on the blade. These include CallManager Express VoIP, stateful firewall inspection, standard (non-Group Encryption Transport) IPSec VPN connectivity and content caching,

— Phil Hochmuth

Cisco to bolster video portfolio

Cisco this week is expected to unveil a series of new and enhanced products designed to let carriers deliver application- and subscriber-aware video services.

The announcements are slated for this week's ITU Telecom World conference in Hong Kong.

Among the new products are the Cisco Content Delivery System (CDS), which is a network of appliances Cisco calls Content Delivery Engines (CDE) that collect, store, distribute, personalize and stream content.

CDEs form a virtual platform on which a variety of so-called Content Delivery Applications can be deployed. The CDS expedites content delivery — personalized entertainment, interactive media and targeted advertising — to subscribers' televisions, and to PCs, mobile handsets and other multimedia-capable devices.

The CDS is installed at Charter Communications and Time Warner Cable, and is in trials with a number of wireline providers around the world, Cisco says.

Among the enhanced products are Cisco's 7600 series router, which now supports Cisco's Intelligent Services Gateway, which provides policy control, service control and subscriber management. Further enhancements include integration of video/voice Session Border Control for IP Multimedia Subsystem and non-IMS applications.

A future enhancement to the 7600 router is a capability Cisco calls Visual Quality Experience (VQE), which will improve the quality of video service and viewing experiences by enabling network-based, rapid channel-change and video error repair.

VQE supports such industry standards as Real-time Transport Control Protocol and Real-time Transport Protocol to help providers detect and repair packet loss on degraded lines. VQE initially will ship as an appliance but will be integrated into the 7600 series routers soon, Cisco says.

The 6-year-old 7600 router, considered by some observers to be long in the tooth, continues to be Cisco's workhorse platform for Ethernet-based edge applications, such as video, for businesses and consumers.

"We have a platform that is very strong on Ethernet, and we're increasingly adding capabilities to it that are higher-level services," says Mike Volpi, senior vice president of Cisco's Router and Service Provider Technology group. "The 7600 road map is very rich in those broad ranges of new services."

"The 7600 we sell today bears no resemblance to the one we sold six years ago," Volpi adds. Sales of the 7600 grew in excess of 40% over the past year, he says.

Services enabled by these new and enhanced products will be delivered to residential and business customers via Cisco's Scientific-Atlanta set-top boxes. Cisco acquired Scientific-Atlanta a year ago for \$6.9 billion.

Cisco also is expected to announce this week that Scientific-Atlanta has shipped more than 30 million set-top boxes and more than 6 million digital video recorders.

— Jim Duffy



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Year ends with security undertakings

Goldman Sachs embraces DRM; military targets mobile security.

BY ELLEN MESSMER

As the year winds up, IT managers from Wall Street to the military say they've kicked off ambitious projects to bolster security within their organizations.

At New York-based investment firm Goldman Sachs, one project under the direction of Tom Quinn, vice president of information security, entails adding desktop software for digital rights management (DRM) to restrict viewing, printing or changing financial data. Adding the DRM software made by Liquid Machines, and training employees to work under more restrictive file-sharing guidelines, pose a challenge, Quinn acknowledges. But he foresees a broad benefit of policy enforcement through file encryption.

"What can we do to raise the bar? What can we do to help people not make mistakes?" asks Quinn.

While employees are expected to follow policy guidelines that govern sharing of electronic files, the addition of the Liquid Machines DRM software puts a tangible barrier in place that keeps data encrypted unless the recipient is authorized to view, change or print the information.

The Goldman Sachs DRM deployment commences this month with the integration of the Liquid Machines API into the higher-risk banking applications so an authorized manager can control desktop services for DRM.

At first there will be 100 employees working under the new DRM policy enforcement, but "we envision it on all desktops eventually," Quinn says. He adds that it's taken Goldman Sachs almost five years to prepare for a rollout of DRM.

In the Navy

In the U.S. Navy, the desire for improved mobile security in battle conditions also is prompting a new look at the possibilities for high-security authentication and access to the Department of Defense computer systems.

"We'd like to get rid of passwords and user names," says Pete Butt, chief engineer at the Naval Air Systems Command headquartered in Patuxent River, Md., where testing and evaluation of network

equipment for Navy use is done. "One of the biggest problems is there are so many of them, they have to be complex and no one can remember all of them."

The Navy is eager to identify a mobile fingerprint-based system that would support both computer and building access. To that end, 30 users at the Naval Air Systems Command are testing a handheld device called the Mobio made by start-up Cryptolex Trust Systems.

"This is healthy technology we'll probably end up using," says Butt about the Mobio, which not only supports biometric scanning of fingerprints but also one-time password authentication and VPN methods.

Mobio converts a fingerprint biometric to a biocode that can be used to establish one-time single sign-on for applications by using the Cryptolex software programming interfaces.

"You could use the Mobio to log into the Web," Butt says. "And we could use this to positively identify access to routing switches — we operate the backbone network for the Navy and run the networking systems."

Navy personnel today makes use of the military's Common Access Card for computer access, "but with this, you're still back to relying on those user names and passwords," Butt says. If the Cryptolex Mobio tests work out within the Navy's research environment, the broader use would likely be the Navy Marine Corps Intranet serving hundreds of thousands of users.

Banks fight cybercrime

As 2006 fades and 2007 looms on the horizon, the retail banking sector is another industry compelled to innovate in order to fight cybercrime.

BBVA Bancomer, a Mexican bank with about 10 million customers, found fraud was becoming a problem in its online banking service over the past few years. "It was easy for fraudsters to get passwords, mostly when customers were using public services, such as at hotels and airports," says Gaston Huerta, Bancomer's director of fraud detection.



"We'd like to get rid of passwords and user names."

Pete Butt, chief engineer at the Naval Air Systems Command

Bancomer began beta-testing an online fraud-prevention service called Falcon Online Access under development by a company called Fair Isaac.

The Falcon Online fraud-detection service includes software that is installed on the bank's Web server used for online transactions, and monitors users' interactions. Falcon watches to determine signs of risk, such as if the remote computer used for banking appears to change, detecting a possible man-in-the-middle attack, or if the typist entering the account data is typing differently from the usual pattern.

If Falcon Online detects signs of possible fraud, it immediately sends a security alert to the designated security manager within the bank. "Once some suspicious operation starts to happen, we immediately verify the account and talk with the customer," Huerta says.

The Falcon Online fraud-detection service has dramatically reduced the fraud problem over the last few months, Huerta says. "Most of the fraud we have seems to be perpetrated in Mexico," he adds.

In the United States, banks are taking steps to counter online fraud, particularly since the federal government's regulatory arm, the Federal Financial Institutions Examination Council (FFIEC), told banks they must show progress next year in authenticating customers online using more than a simple reusable password.

"We're obliged to implement the FFIEC guidelines," says David Vandeven, president and CEO at Missouri-based Midwest Independent Bank, a special-charter bank whose customers are 450 other financial institutions in Missouri and Iowa.

A bank password for Midwest Independent Bank can let the

user access not just a separate account but the primary banking funds-transfer systems such as Fedwire, Vandeven says.

To meet the FFIEC mandate that kicks in after December, Midwest Independent Bank is having its bank clientele use a photo-identification authentication method from PassFaces that requires users

to pick out the pre-selected images known only to them as part of the online access process.

"The reason we selected it is because it's an intellectual solution not tied to a device and it affords a lot of flexibility," Vandeven says.

And Hampton, Va.-based Old Point National Bank, with \$830 million annual assets, just adopted a similar image-identification system from RSA Security. The bank's payments officer, Jean Parra, says the security system has been tested and notification of its requirement has been sent to about 9,000 bank customers.

Parra says the bank is confident the online authentication system will meet with FFIEC approvals. ■

Cisco

continued from page 10

let users set up a very large VPN using just the basic routing infrastructure of the Internet, and simply encrypt certain parts of the communications stream, "so you get the security aspects of a VPN without having to create this hardened tunnel."

"If a company is consistently adding sites, plans to add sites or hasn't gone through a VPN buildout yet, GET VPN is a no-brainer," Whiteley says. The fact that it's an IOS function that runs on routers could also simplify a deployment by eliminating the need for separate VPN gear on the network, he adds.

What is there to GET?

Other industry observers are not as excited about GET. In particular, its method of using GDOI to distribute IPsec keys via multicast is "a fairly obscure aspect of VPNs that only has a very limited applicability," says Joel Snyder, senior partner at Opus One network consulting firm and a member of the Network World Lab Alliance.

"For group communications using multicast, GDOI is a nice feature," Snyder says. "But, honestly, that's an unusual thing. Most folks are not trying to do site-to-site multicast traffic over an encrypted tunnel."

Because running a GET VPN requires a certain Cisco IOS version — which implies an all-Cisco network — GET VPN shuts out any sites without Cisco, or even Cisco sites not enabled for GDOI. "If you don't support [GDOI], you won't be able to talk — so this is an interoperability issue," Snyder says. He adds that site-to-site VPNs are not that hard to set up and manage with the right tools and products.

"If [Cisco] had a reasonable VPN management tool, and if they had good VPN concentrators, then they wouldn't be as [troubled] about the whole efficiency issue" of meshed, site-to-site VPN management, Snyder says. "Solving the full-mesh VPN problem by dragging a new and incompatible technology into the picture and calling this better seems to me to be a really poor argument," he adds. "They could solve the full-mesh VPN problem by simply doing VPN right."

Smaller sites with a few tunnels connecting locations probably won't be interested in throwing out an established IPsec VPN for GET VPN, analysts say. Persuading larger sites with established VPN links, and considerable investment in Cisco VPN gear, might also be a tough sell. "For Cisco to be able to claim [GET] is better way to do VPNs, we'll need to see some proof points," Kerravala says. ■

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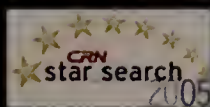
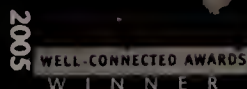
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Vista

continued from page 1

Mick Jagger sang the band's "Start Me Up" to kick off Windows 95, but the fanfare for Vista's release to volume licensing customers appears to be coming down to just another business decision.

And users are contemplating whether they want to make the upgrades, and more important, why and when.

"What are we doing about Vista?" asks Jim Tieri, director of IT for Holland Co. a Crete, Ill., manufacturer of railway welding and maintenance equipment, "In one word: Apple."

Tieri, who has 300 desktops used mostly by remote workers, says his department has been evaluating Vista and its benefits, and they think it looks a lot like

Apple's OS X. "We have bought our first group of Macs, and we are seeing how we can integrate them into the environment, and see if we can use them from a business standpoint." He says the major application to support is ERP, and that can be run through a browser interface. As far as the Office release, Tieri says he's already running some copies of Open Office that are showing some real possibilities. "For us there are no feature benefits in Office 2007."

Tieri isn't alone in his evaluation. Tom Gonzales, senior network administrator for the Colorado State Employees Credit Union (CSECU), says his organization is considering its options, including Macs, given what he perceives to be support and training issues associated with Vista.

"The changes in Vista are significant enough that we think we can absorb the change going to Macs just as easily as going to Vista," he says. It's an evaluation process worth pursuing, because CSECU just refreshed its desktops 18 months ago and doesn't plan on rolling out any of the new Microsoft offerings, including Office and Exchange, in 2007.

Gonzales says that when budget dollars are spent on a desktop upgrade "we want to do the best thing available. If you asked me two years ago to consider Macs, I would have laughed. But I have spent some time with Apple, and they are not the unviable option that they used to be."

But not all users are looking at the grass on the other side of the fence.

Bechtel, the global contracting

company, already has its plans in place, according to Fred Wettling, the company's infrastructure architect. Office will be rolled out first after the San Francisco company certifies that its applications run on the new software. He says that process should be complete by the end of March.

"Vista will be through our engineering process in March, and certification of applications will take us through the third quarter before we get that done," he says.

Wettling says Vista is both a milestone and a crossroads for Microsoft.

"Microsoft is starting to get the message they are not alone in the world and there is a need for integration," Wettling says. "The way Microsoft is poking around with open source people, it is late to the game on that compared to

IBM, HP and others."

But Wettling says Vista has some definite milestones, including support for IPv6, which Bechtel plans to exploit.

"It is a major change and should have a significant impact on the industry," he says. "They have improved on standards support but still have a ways to go."

Wettling also cites improved stability and security and says, "What we hope to see is real improvement in manageability."

While users have been doing their evaluations, some surveys of the market show that uptake of Vista will just barely outpace that of XP when it shipped in 2001.

According to Ovum, 15% of PC users will move to Vista within the first year, compared with 12% to 14% of users who switched to XP in its first year on the market. ■

InSite: Lessons from Leading Users

Mary Kay putting on a SharePoint face

BY JOHN FONTANA

Mary Kay wants to be more than just another pretty face, and the company's IT department is digging deep into Microsoft's Office 2007 product lineup to make that happen.

The 43-year-old cosmetics company, with more than \$2.2 billion in annual sales in 2005, is focusing on Microsoft Office SharePoint Server (MOSS) 2007 to become the foundation of its content management, collaboration, search and business-intelligence efforts.

MOSS is part of a family of Office branded products that includes software, hardware and a Web conferencing service for real-time communication. The lineup includes the traditional Office applications, Office Communications Server 2007, Exchange Server 2007, the Office Communicator 2007 client including a version for phones, and the Office Live Meeting 2007 Web conferencing service.

Microsoft's intent is to provide a single platform for real-time communications that can be integrated with traditional desktop and network applications, mobile devices and the business processes that run across all three.

Mary Kay aims to set up a corporate collaboration infrastructure with MOSS as the hub that ties together front-end Office applications, such as InfoPath forms technology, real-time communications and a Vista desktop.

MOSS also will become Mary Kay's main content management repository and workflow engine to automate its manual business processes.

It's a lofty endeavor that has rewards and risks, admits Obe Salahuddin, senior analyst/programmer with Mary Kay.

Portal makeover

Mary Kay, a leading cosmetics company, is moving its portal, content management and collaboration infrastructure to Microsoft's new Office SharePoint Server 2007, which offers a variety of new features and functions.

Functions	What's new
Collaboration	New templates for blogs, wikis, discussion groups, instant messaging presence information.
Portal	"Targeting" features display content based on user identity or group affiliation.
Business intelligence	Portal that includes Reporting Center, which puts SQL Server reports into SharePoint. Also integrates with Dynamics CRM.
Search	Key feature for collaboration, portal and business intelligence.

"It just seems like Microsoft's operating system, server and Office groups are all getting on the same page and attempting to deliver solutions that truly complement each other. Our hope is that all this comes together so our employees can use all these components to be more efficient at what they already do."

But with enough experience in long-term projects, Salahuddin is realistic. "Things don't always work out perfectly, but this is our plan going forward," he says.

The plan began in June, when Mary Kay jumped into Microsoft's Technology Adopter Program and began rolling out MOSS, which will be officially released to volume licensing customers Nov. 30 along with Vista and Exchange Server.

The company is tapping into search features of MOSS to

support its existing portal built with SharePoint Portal Server 2.0 as the content repository and Web Parts for building customized features.

MOSS acts as a Web service that provides search capabilities to an internal portal that serves roughly 500 staff members in the IT department.

The search infrastructure is built on two Dell PowerEdge 6500 servers with Quad 2.0GHz Intel Xeon processors. The servers run Windows 2003 SP1 with 4GB of RAM. Both servers run a Web front end, while one also serves as the indexing engine.

"We used to have security by obscurity, but when we put search in now we can get to all that information so we have to control it," Salahuddin says.

The idea is to perfect that control as the company rolls out content management services, which are a big part of its overall plans. MOSS 2007 incorporates the old Microsoft Content Management Server, which has been discontinued.

MOSS also will support Mary Kay's team sharing sites and business process automation. The company's road map includes extending search to file shares and SharePoint team sites, which are online workspaces where staff can collaborate and share digital data.

As Mary Kay prepares for rollout of these features over the next year it is finding some challenges in making the migration to MOSS.

In its first instance of the portal, Mary Kay customized its project management application using a SharePoint Portal Server 2.0 technology called Master Pages. That technology is not supported in MOSS, which uses templates to build pages. While the new version allows for more flexibility, Mary Kay has to rewrite the application for the new SharePoint environment. ■

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New e-records rules: who's complying?

Companies scrambling to address revised Federal Rules of Civil Procedure.

BY DENI CONNOR

Organizations are woefully unprepared to comply with amendments to the U.S. court system's Federal Rules of Civil Procedure that call for businesses to retain and be able to produce electronic records, recent studies show.

The new rules, which were approved by the U.S. Supreme Court in April and took effect last Friday, require any business that could be involved in litigation in federal court to retain electronic records — such as e-mails, instant messages and text documents — and be able to retrieve them if economically feasible. The rules also require company attorneys and IT managers to be able to show how electronic records are stored, what mechanisms are in place to retrieve them, and when and how they are deleted.

Virtually all businesses are affected by the new rules, analysts say. Companies involved in litigation related to lawsuits that cross state lines, IRS actions, and Health Insurance Portability and Accountability Act or Sarbanes-Oxley Act violations, for example, are expected to comply. According to industry analysts, events requiring electronic discovery are becoming more common: A survey by Enterprise Strategy Group (ESG) shows that 91% of organizations with more than 20,000 employees have experienced an electronic discovery involving e-mail in the past 12 months.

Many businesses are not aware of the new amendments, however. More than half of 75 company attorneys surveyed by LexisNexis Applied Discovery weren't aware of the Friday compliance deadline. Just 7% said their companies would be able to comply with the new rules.

Similarly, a Cohasset Associates survey shows that nearly 50% of organizations have no e-mail retention policy in place. Although not all policies will be the same, there are three elements that are essential to make them litigation ready: a clearly written records and information management policy; a legal hold-and-lift process to secure all informa-

tion that will be relevant to an action; and an e-mail archiving process that includes services and software.

Vivian Tero, senior research analyst for IDC, says that businesses should "consider putting in place a corporate records-retention program as part of [their] litigation readiness." Organizations also should involve IT, compliance officers, records managers, and in-house and external legal counsel in discovery teams, she says.

Responding to electronic discovery requirements can be difficult for organizations that aren't prepared. According to the ESG survey, 56% of enterprises found that retrieving data from such offline media as tape was a significant challenge, and half of the respondents said a lack of effective software tools to search for and retrieve information was a challenge. Many organizations misunderstood the electronic discovery requirements and thought they applied to only the financial services industry.

Not all enterprises have been caught off guard by the amendments, however. Some suggest they are simply a formalization of existing requirements. "I am by no

Required procedures

Amendments to the U.S. court system's Federal Rules of Civil Procedure call for businesses to retain and be able to retrieve electronic documents.

Amendment	Effect on IT
Rule 16(b): A description of all electronically stored information must be presented within 99 days of the beginning of a legal case.	E-mail archiving and retention software and policies should be put in place.
Rule 26(a): Electronically stored information, including e-mail, must be searched without waiting for a discovery request.	IT should put in place e-mail archiving and retention policies so information can be discovered rapidly.
Rule 26(b): A party need not provide discovery of electronically stored information . . . if there is an undue burden or cost.	Requires the organization to prove that putting in e-mail archiving software is an onerous expense.
Rule 26(f): Requires litigants to discuss any issues relating to preserving discoverable information.	Requires legal counsel to know how e-mails are being retained and how they can be searched and retrieved.
Rule 34(b): Requires requesting party to designate the form in which it wants electronically stored information to be produced; requires the responding party to identify the form in which records will be produced.	IT must be aware of how e-mails are stored — on disk or tape, for example — and how they will be retrieved.
Rule 37: Establishes a safe harbor provision for deleting records.	Lets IT establish policies for the deletion of e-mail.

means expert in the rules of discovery, but it appeared at first glance to be simply a clarification of already-existing obligations to codify recent case-law decisions into formal rules," says Timothy Hogan from the Office of Business Conduct at Beth Israel Deaconess Medical Center in Boston. "The new language gener-

ally emphasizes the importance of policies and standard procedures covering the routine, good-faith operation of an electronic information system," he says.

At Beth Israel Deaconess, CIO John Halamka is putting in Symantec's Enterprise Vault early next year to archive e-mail.

Such preparedness can pay off.

Although the new rules don't stipulate fines for noncompliance, District Court judges have been known to fine companies for not responding to a discovery request fast enough. Last year, the Alabama Circuit Court of Appeals fined General Motors \$700,000 for delaying a discovery process by 98 days. ■

Appliance boasts 48 processing cores

BY JENNIFER MEARS

As Intel and Advanced Micro Devices roll out quad-core processors, newcomer Azul Systems this week plans to introduce the second generation of its Java appliances that are built on custom-designed chips containing 48 processing cores on each piece of silicon.

At the same time, Azul, which has had its initial systems in the market for about one year, is touting a growing cadre of customers, including British Telecom (BT), which is turning to the systems vendor for help in scaling transaction-heavy Web-based applications.

Azul's Compute Appliances are designed to handle the processing-intensive workloads associated with dynamic Web-based applications. The idea is to provide a shared pool of processor and memory resources for traditional application servers to tap into.

Similar to the way most servers now access buckets of external storage, application servers running the Azul proxy software can tap into the compute power and memory

they need for Java or .Net processing by linking to the Azul Compute Appliance. As a result, the load on application servers is lessened and customers don't have to overprovision to ensure consistent response times for applications that spike traffic.

"We don't want to be deploying a lot of capacity that we're just not using," says Mark O'Flaherty, business-to-business delivery and operations manager for BT.

Earlier this year, BT launched a new division called Openreach that is a Web-based clearinghouse for providing services to the company's customers. Consistent, near-immediate response time is imperative for the new effort to succeed, and BT found that Azul's Compute Appliances provided the technical platform capable of achieving those goals, he says.

"This is a smarter tool that allows us to better manage [resources]," says O'Flaherty, who is based in Belfast, Northern Ireland. "It's something we've tried to do with our Unix boxes, but we just haven't had the right levers

to pull. For the geeks inside of us, this is exciting; we get to think about the [technical] problem in a different way."

BT has been running Openreach on three 16-core Sun Solaris boxes but plans to offload workloads to the Azul Compute Appliances this month, eventually paring down the hardware it needs on the front end.

While BT is using first-generation Compute Appliances built on Azul's 24-core Vega processor, Azul this week is rolling out systems built on the 48-core Vega 2 processor.

"Systems in our second generation range from 96- to 768-processor [cores] in a single, coherent system," says Stephen DeWitt, president and CEO of Azul. The previous generation scaled only to 384 processing cores.

Azul's Vega 2-based 3210 and 3220 Compute Appliances, both in a 5U form factor, are priced starting at just less than \$50,000 for 96 processing cores and 48GB of memory. Higher-end systems are scheduled to be available in the second half of next year, Azul says. ■

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**EYE ON THE CARRIER****Johna Till Johnson**

Structuring your telecom sales strategy

Techies usually hate dealing with sales folk, because we seem to come from different worlds. Engineering is about honesty: Either that bridge will hold or it won't. Sales is about deceit (or so we geeks assume): Lie to the cus-

tomers and cash the commission.

So it's no surprise that renegotiating your telecom relationship (and dealing with telco sales folk) ranks right around getting a root canal for most IT execs' lists.

But the right deal can save your

organization millions of dollars and lay the foundation for the next three-to-five-year architecture. Here are some tactics to make the most from your telecom procurement process:

- Define your goals clearly in the

RFP. There's no one "right" definition of a successful deal: One company might want to save money at all costs. Another might wish to improve service quality while reducing costs. And a third might be willing to pay more to achieve a wholesale increase in service quality and capability. Whatever your goal is — know it, and state it clearly.

- Start early. Most companies make the mistake of allocating too little time for the RFP process, including negotiation. But by doing that, you're giving up one of the most powerful negotiating weapons at your disposal. The key to getting a great deal lies in being willing to go back to the table as many times as needed to get it done right. Don't shortchange yourself — plan for at least six months for the RFP and negotiations process (and add another eight weeks for the first circuit install).

- End with the quarter. In your RFP, you'll sketch out your intended procurement timeline. If you can, plan to end with a signed contract right before the quarter-end. Why? Sales folks' commissions often are paid on a quarterly basis. If a salesperson sees the opportunity to get the check earlier, he will fight harder to close the deal in a timely fashion.

- Get it in writing. At the start of the process, make it clear that anything a salesperson commits to is something you expect to see in writing in the final contract. Make them provide you with the exact verbiage they'll use (in writing). If they try to argue that the terms are "pending legal approval" — tell them to get legal approval before they commit to you.

- Go as many rounds as necessary. As noted, the key to a successful negotiation is a willingness to go back to the table multiple times. I've found that three to five rounds of negotiation yields the optimum results. And finally, no matter how counterintuitive it sounds, throughout the process remember that you and the telco sales team ultimately want the same thing: a fair deal. Don't give up till you've got one.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.



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CA, Novell set to manage virtual servers

BY DENISE DUBIE

CA and Novell separately last week made available software designed to let IT managers more easily manage physical, virtual and clustered server environments.

CA unveiled its Unicenter Advanced Systems Management (ASM) 11.1, which can not only identify the virtual and physical elements in corporate IT environments but also optimize them based on demand.

"We have seen our customers trying to create some order out of the chaos they have in their environments resulting from various platforms of virtualization and clustering. We wanted to manage that but also provide a platform to show overall performance and activity management," says Peter Richardson, a product manager for virtual platform management at CA.

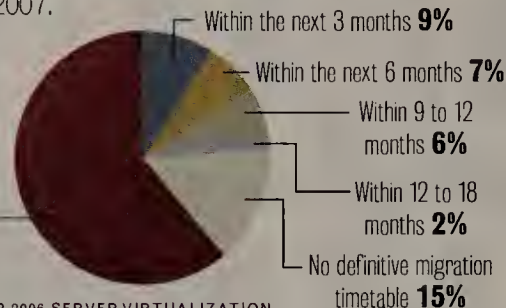
Unicenter ASM — which is a core element of CA's Virtual Platform Management offering — performs continuous discovery of physical and virtual resources, reporting on managed resources and visually mapping virtualized environments to speed problem

Management vendors play catch-up

Industry watchers say virtual machine deployment is outpacing features in today's heterogeneous management software applications, driving vendors to update their capabilities to include multivendor virtual resource management in 2007.

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identification and resolution, the vendor says. It works with CA's Unicenter System Command Center dashboard product to provide a common user interface for all Unicenter components.

ASM works in concert with the vendor's Unicenter Network and Systems Management (NSM) software, utilizing the same distributed software agents on managed machines and a common management database for collecting and storing configu-

ration information.

Unicenter ASM 11.1 can manage virtualization technology from HP, IBM, Microsoft, Red Hat, Sun, Veritas and VMware. Pricing includes an \$1,800 flat fee for a manager component, plus an additional variable cost for each resource being managed (for example, a CPU). CA says customer implementations can start at \$30,000.

For its part, Novell unveiled Virtual Machine Management,

which lets customers deploy and manage virtualization technologies from vendors such as VMware and Microsoft, as well as the Xen hypervisor open source server virtualization software. Part of Novell's ZENworks management platform, Virtual Machine Management also can manage virtualized environments in Novell Open Enterprise Server. It runs on Windows, Unix and Linux systems to manage virtual data center assets and provision workloads based on predefined policies.

Competitors such as CiRBA, IBM and Opsware have released virtual server management wares of late.

Novell continues to build out its management portfolio. Along with Virtual Machine Management, Novell unveiled ZENworks Orchestrator, which enables policy-based automation among managed resources. The software can learn systems performance and resource allocations to better predict demand, Novell says.

The vendor also released ZENworks HPC (High Performance Computing) Management, which helps customers perform grid-based management of Java applications and distribute workloads across parallel systems. Multicast data distribution capabilities let users move and copy large volumes of data to remote resources for processing.

In addition, Novell updated its ZENworks Asset Management software to Version 7.5. With this release, Novell added readiness reports for Windows Vista and Novell's SUSE Linux Enterprise Desktop 10. The software provides asset inventory, software usage and license reconciliation for Windows and Linux desktops.

ZENworks 7.5 Asset Management is priced at \$33 per managed device or user. Novell's three new products are scheduled to be available in December; Novell will release pricing for the new products when they ship. ■

HP cools data center servers

BY ROBERT MULLINS, IDG NEWS SERVICE

HP Labs' research center has developed a new approach to cooling data centers that the company says can deliver 20% to 45% savings in cooling energy costs, depending on the size of the building.

HP says its Dynamic Smart Cooling (DSC) technology — which will be available in mid-2007 — involves placing several heat sensors on racks of servers throughout the data center that send information on temperature changes to a central monitoring system. As the sensors detect an increase in a server's temperature, a signal is sent to the nearest of several air conditioning units to throttle up to cool the server. When the server cools because it's not doing as much computing, the air conditioner throttles down, too.

HP, which introduced the concept of DSC in 2003, revealed a number of additional program details last week. It announced the creation of a Data Center Solution Builder program with design partners that will work with HP to implement DSC, which can be retrofitted into existing data centers.

HP has started trials of the technology and will implement DSC in six new U.S. data centers for its own operations.

In addition, Pacific Gas & Electric, the power util-

ity serving Northern California, will make rebates available to data centers that deploy DSC, says Mark Bramfitt of PG&E.

Energy consumption is an issue and DSC technology addresses data center management concerns about the operating expense of powering and cooling, says Paul Perez, vice president of HP's Technology Solutions Group.

Power consumption averages 40% of a data center's operating expenses, Perez says, citing industry research. And 60% to 70% of that energy expense goes to cooling servers, he says.

Other technology companies are working on ways to keep data centers cool, says Jonathan Eunice, founder and principal adviser at Illuminata IT research firm.

Chip makers such as Intel and Advanced Micro Devices are developing processors that run cooler than they have in the past, Eunice says.

HP's chief competitor, IBM, is trying to address thermal issues on a system level.

"IBM does have its services arm with the ability to send out heating experts to map the data center hot spots and advise about efficiencies," Eunice says. IBM also offers a product called Power Executive that measures and modulates power consumption. ■

F-Secure takes aim at rootkits

BY ELLEN MESSMER

F-Secure last week announced an upgraded version of its Client Security antivirus and desktop firewall software that adds rootkit detection and host-based intrusion prevention.

Expected to ship in mid-January for Windows XP, Client Security 7.0 will include what F-Secure calls its DeepGuard rootkit detection to identify hidden malicious code and remove it (although removal requires action by systems administrators).

Rootkits can be used to hide any type of malicious code or files. Rootkit removal remains a more difficult process than traditional virus removal because rootkits typically are designed to embed themselves more deeply into the operating system. Security experts debate about how easy it is to remove them without harming the operating system.

F-Secure, which developed the standalone antirootkit tool Blacklight, says rootkits can be removed safely but administrators should oversee carefully the process that F-Secure tools facilitate.

In mid-January, F-Secure also expects to release a beta version of Client Security 7.0 for the 32-bit version of Vista, not the 64-bit Vista, which includes Microsoft's PatchGuard kernel-protection mechanism.

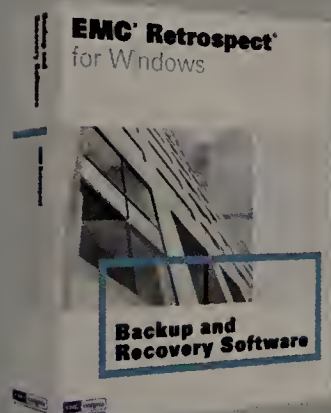
PatchGuard prevents unauthorized access to the 64-bit operating system, but several security vendors say it also hampers the efficacy of some of their products.

In response to vendor requests for more openness in the 64-bit version of Vista, Microsoft has said it expects to provide supporting APIs in Service Pack 1 at an unspecified date.

"We trust these new APIs Microsoft has planned will overcome the challenges of PatchGuard," says Ari Alakiuttu, F-Secure's vice president of marketing.

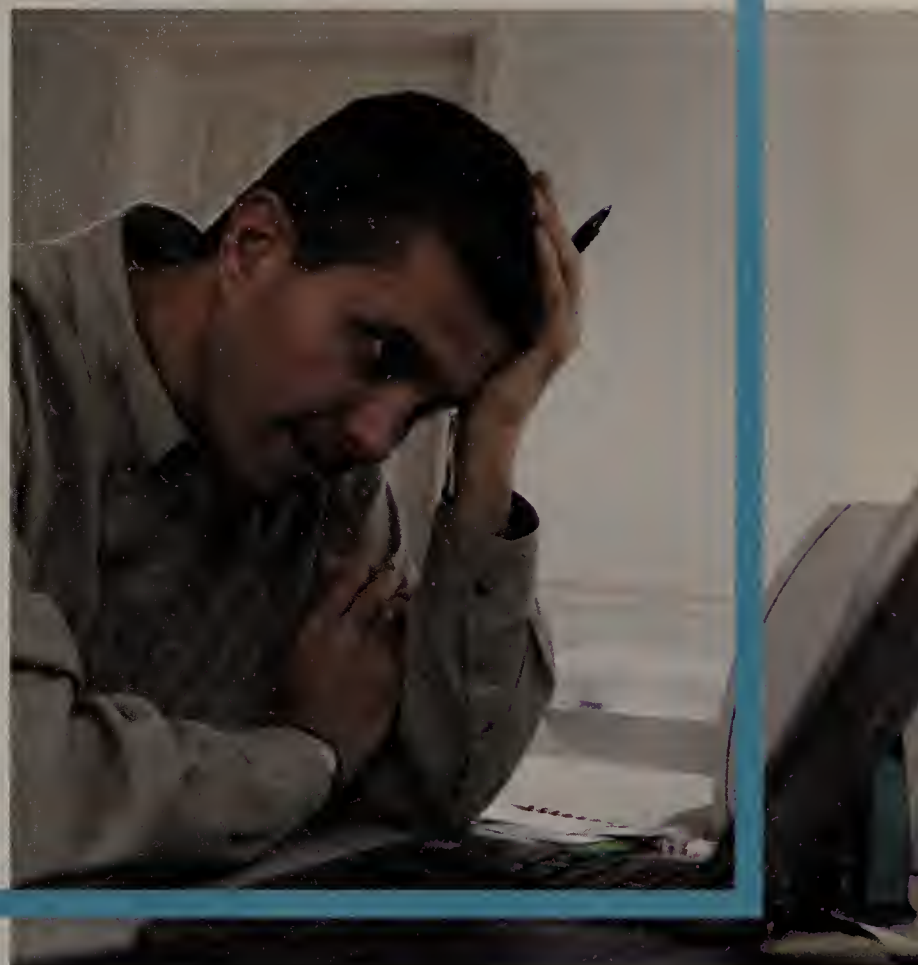
Client Security 7.0 will cost \$41 per user, per year, based on 50 users. ■

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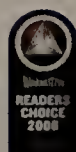
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Shaklee goes outsourcing route

BY CAROLYN DUFFY MARSAN

Imagine being an IT director faced with this problem: Your company has just been bought by a private equity firm that wants to take the operation global. You need to upgrade a 10-year-old network but you don't know what countries you'll need to support or when you'll need to support them.

That's the challenge the IT team faced at Shaklee, a provider of natural foods and household cleaners based in Pleasanton, Calif.

Shaklee ended up signing a four-year, multimillion-dollar network-outsourcing deal with Virtela Communications this summer, after having chosen the VPN provider for several smaller projects.

"Now we can walk into any meeting and say to the management team, 'Give us 60 days and an address, and it will be done,'" says Greg Fina, director of IT architecture and quality at Shaklee. "We don't even need the full 60 days to get our circuits in place."

Industry analysts say virtual network operators (VNO) like Virtela are a good fit for businesses going global.

"For any small-to-midsize business with global aspirations, this is a great way to go," says David Passmore, research director at Burton Group. "Where VNOs make less sense is with very large enterprises that can cut their own deals with carriers and gain economies of scale," he says.

Shaklee is a 50-year-old company that was purchased in 2004 by investors who planned to expand it rapidly worldwide. At the time Shaklee had businesses in the United States, Canada, Mexico, Japan and Malaysia. "We had no global network, and no flow of data among the five countries," Fina says. "Our technology was outdated. . . . We hadn't made a major investment in 10 years."

The aggressive goal of Shaklee's new management team was to expand into 50 countries in 10 years. "In order to do that, we not only needed to enable technology in the countries we already had but we had to build a foundation for rolling out in two countries a year starting in 2006," Fina says.

Shaklee's IT team determined its data and telephone networks could not support global expansion, so they outlined a three-step replacement process: First, they would hire a WAN provider; next, they would upgrade the company's voice and data network gear; and finally, they would hire

someone to manage the network end-to-end.

IT staff spent six months evaluating bids for the WAN contract and ended up choosing Virtela. Other bidders included MCI, AT&T, Sprint and Infonet. "We felt that they had a very innovative solution. We thought the price point for what they were providing was good, and we liked the relationship we had developed with them over the six months" of the procurement process, Fina says.

Shaklee signed a two-year contract with Virtela for a fully managed IP VPN service, including line provisioning, router management and trouble ticketing. The network supports 500 users and runs key applications including data warehousing, CRM, e-mail and VoIP.

The new WAN was completed in November 2005 for around \$250,000. Once the IP VPN was in place, Shaklee closed its processing centers in Canada and Mexico and consolidated operations at its headquarters location. "Through that consolidation, we were able to pay for the WAN in its first year and recover all of the initial investment," Fina says.

Next, Shaklee upgraded its U.S. and Canadian offices' voice and data equipment. After evaluating equipment from Cisco and Avaya, Shaklee bought NEC phone systems and Foundry Networks data switches, and rolled out 100Mbps Ethernet to its desktops, replacing 10Mbps Ethernet connections.

"We have Power over Ethernet on the Foundry switches," says Kirk Allen, director of technology at Shaklee. "We're using this to power the instruments for NEC's VoIP solution. We went to VoIP in any facility that required a technology refresh."

Shaklee spent \$1 million on the network equipment upgrade, which was completed in March 2006.

Meanwhile in December 2005, Shaklee upgraded the remote-access system for its 500 employees, and again chose Virtela, which had bid against Fiberlink and iPass.

When it came time to hire a company to provide end-to-end management of its LAN and WAN devices, Shaklee asked Virtela to submit a bid. "We were so impressed with their ability to win our business on the WAN procurement and the quality of service we had received in the last six months, that we went out with a no-bid deal," Fina says.

In July, Shaklee rolled all of its business with Virtela into a single four-year, seven-fig-

ure contract. "This is the first company that I've ever dealt with that is a one-stop shop. . . . With Virtela, if I have a problem, I call one number," Fina says, pointing out that Shaklee's global account representative handles problems, as well as requests for additional services.

"Also, the install engineers that started with the WAN project have stayed on through phase three of our project," Fina says. "It's that same group of engineers that do all the work, so they have almost as much understanding of the network as we do. It's very reassuring," he says.

Analyst Passmore says it's not surprising that Virtela won Shaklee's global network business. "If you're trying to provide site-to-site connectivity across multiple carrier boundaries, the carriers are not anxious to peer with each other for services like MPLS, so really the only place you can go to is a VNO like Virtela or Vanco," Passmore says. "Companies like having [service-level agreements] that span multiple service provider clouds," he says.

So far, Virtela has taken over network management in Shaklee's three U.S. sites. "I don't know the exact figures for the return on this investment, but we will be able to open new markets sooner than we anticipated because of Virtela's global reach," Fina says.

Shaklee has a rigorous SLA with Virtela that includes delivery of service anywhere in the world within 60 days. In addition, Virtela has to notify Shaklee of an equipment failure within 15 minutes.

"We've had stuff that hasn't gone perfectly well," Fina admits. "When there's a problem, we escalate it to their technical staff and they solve the problem."

Next, Virtela will take over managing Shaklee's firewalls and network security devices as part of its outsourcing deal.

In December, Shaklee is opening operations in Taiwan that Virtela supports. "We were able to open up Taiwan one month sooner than anticipated because of Virtela," Allen says. "They set up the circuits in five weeks instead of six weeks," he says.

Thanks to the network upgrades, Shaklee's IT staff can support whatever growth the company's management team wants. "Two years ago, from an infrastructure perspective, we couldn't have executed on this business strategy," Fina says. "Now we have agreements in place with all of our vendors to deliver services into whatever country we want to go." ■

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3Com buys out Huawei joint venture

Deal gives 3Com control of large-enterprise equipment venture — ammunition to battle Cisco, Nortel.

BY PHIL HOCHMUTH

3Com last week said it is buying full ownership of its joint venture with Huawei for \$882 million.

The deal ends a bidding war between Huawei and 3Com, as well as outside private equity firms, to buy the Huawei-3Com joint venture, known as H3C. 3Com, which already owns 51% of H3C, will gain control of the high-end LAN switch and router products produced by H3C, which 3Com had used to reestablish itself in the U.S. enterprise network market over the last several years.

The deal is the first major move by new CEO Edgar Masri (www.nwdocfinder.com/6342), who took over 3Com in August. H3C was formed in 2003 under former CEO

Bruce Claflin, who announced his retirement in January. For 3Com, the joint venture was an attempt to reenter the market for WAN routers and large LAN switches. 3Com ducked out of those markets in 2000, the last year the company was profitable. Huawei's goal of gaining a larger presence in the North American corporate and carrier markets never materialized. As part of the deal, China-based Huawei is prohibited from competing in 3Com's market for 18 months.

Reports say that 3Com's \$882 million bid for H3C — which analysts value at \$1.8 billion — beat offers from Bain Capital, Silver



3Com's \$882 million buyout of its Huawei joint venture is the first major move by new CEO Edgar Masri.

Lake Partners and Texas Pacific Group, as well as Huawei itself.

3Com did not specify how it would pay for the remaining 49% of H3C. As of September, the company had \$916 million in cash, \$197 million of which was from the Huawei joint venture. 3Com has seen an uptick in its sales recently, as it posted \$300 million in revenue for its first fiscal quarter of 2007, which ended Sept. 1. This was up from \$255 million in the

previous quarter and almost a 70% increase from the \$177 million 3Com made in its first fiscal quarter of 2006. 3Com also cut its losses by half, to

\$20 million, compared with a year ago.

H3C products include the 3Com Switch 7700 and 8800 series Gigabit and 10G Ethernet switches, which compete with products such as Cisco's Catalyst 6500, Nortel's Ethernet Routing Switch 8600 and HP ProCurve's 9300 series. WAN routers and firewall gear built under the H3C venture include 3Com's Router 3000, 5000 and 6000 series, which compete with Cisco's Integrated Services Router and Juniper's J-Series product lines, among others. ■

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WatchGuard puts high-end security in low-end boxes

BY TIM GREENE

WatchGuard is adding high-end security features to its low-end protection devices to make it more affordable for customers to put advanced network defenses at their sites.

The company is adding proxy firewall capabilities that screen HTTP, FTP and POP3 traffic, at the application layer, making it more secure than a network-layer firewall, because it checks payloads and attachments for malware.

The new capabilities are being added to Firebox X Edge 20e and 55e devices, including the models of each that include a wireless access point. These devices sit between the Internet and office networks and include firewalls, VPNs, traffic shaping, WAN failover options, Web filtering and virus scanning.

WatchGuard also is bundling these devices with three security services for a flat price. These

packages include WatchGuard's Gateway Anti-virus/Intrusion Prevention System, spamBlocker, WebBlocker and Live Security services.

One-year subscriptions for the services plus a Firebox X Edge 20e cost \$800 with the standard hardware and \$900 for the wireless version. The same service bundle with the Firebox X Edge 55e costs \$1,200 for the standard hardware and \$1,300 for the wireless version. The company has not set the price for renewing the services after the first year.

The upside of these devices is that they are less expensive than buying separate devices that support each function, so they are easier to manage and install.

But they are not for all businesses, says Rob Whiteley, an analyst with Forrester Research. Large corporations don't want multifunction security devices because they want to keep secu-

rity, acceleration and routing technology separate for internal billing purposes. Different IT departments handle these separate infrastructure technologies, he says.

Surveys by Forrester indicate the desire for such integrated devices shrinks as businesses get larger. "Large companies want them the least," Whiteley says.

However, retail companies like these products because they have many sites without dedi-

cated IT staff, he says. It is simpler for IT to place a manageable multifunction device in stores than to place separate routers, firewalls, virus scanners and content filters, he says.

These multifunction boxes — also called unified threat management (UTM) gear — are not meant for the smallest businesses, either, Whiteley says. "They bring the costs down, but for small businesses, it's still too much," he says.

Plus Cisco and Juniper, whose

multifunction routers are moving downscale, may be able to attract low-end customers because their devices can be integrated into their network architecture, he says. In addition, Check Point, Crossbeam, Fortinet, ServGate, SonicWall and Xyzel offer a spectrum of these UTMs as well.

The new Firebox X Edge software Version 8.5 with the new security features will be available by the end of this month, WatchGuard says. ■

Symantec acquires Revivio's IP, assets

BY DENI CONNOR

Symantec has snapped up faltering continuous data protection vendor Revivio for an estimated \$20 million.

The company bought Revivio's intellectual property and will discontinue sales and development of Revivio's Continuous Protection System appliance. Symantec does not normally announce the acquisition of intellectual property, a spokeswoman says.

Symantec, which entered the data protection market with its acquisition last year of Veritas, plans to add Revivio's technology to its NetBackup product and sell a stand-alone CDP product of its own. It already has near-continuous data protection capability in its Backup Exec products.

CDP technology saves data to disk as changes are made — continuously — rather than on a scheduled basis. With CDP software, IT administrators can roll back changes to any point in time.

Symantec's acquisition of Revivio's intellectual property signals further consolidation of the back-

up, recovery and replication space. Network Appliance acquired Alacritus in 2005 for its CDP, as well as virtual tape library technologies. EMC bought Kashya earlier this year for CDP and replication; EMC replaced an OEM deal with Mendocino and introduced Kashya technology in its RecoverPoint product. In July, CA purchased XOsoft for its CDP and replication capabilities. In addition, Atempo acquired Storactive.

Other big vendors such as IBM and Microsoft also have introduced CDP products. HP rebrands and resells Mendocino's software.

Symantec has extended job offers to Revivio CTO and founder Michael Rowan and Director of Engineering Kevin Rodgers, as well as 11 other Revivio engineers.

Revivio started in 2001 and has \$55 million in funding from Charles River Ventures, Flagship Ventures, Bessemer Venture Partners, Globespan Capital Partners and the Nomura Group. In 2005, *Network World* named Revivio to its start-ups to watch list. ■

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**With competition heating up, how will
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The World According To Dennis

I want a backup for our backup.
A contingency for our contingency.
When the unexpected hits,
when the storm comes,
we'll still be standing.

This is my world.

**My world runs on
Dynamic Networking.**

Dynamic Networking from the new AT&T

includes redundancies and security failsafes from the ground up to help ensure business continuity, operational readiness and data recovery. With easy provisioning of VPN solutions for secure, remote access from almost anywhere. So no matter what comes down, Dennis knows his enterprise can be up and running. Learn how Dynamic Networking can enable your business.

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Canon presents five new Color imageRUNNER choices.



Introducing Canon's complete line of new Color imageRUNNER® solutions. With five new models to choose from, we're certain you can find the perfect one for your business. Not only that, but we took the industry-leading Canon Color imageRUNNER Series, and vastly improved it with our exclusive imageCHIP system architecture which can be found in every model. Our new imageCHIP technology not only enables you to print, scan and fax simultaneously without bottlenecks in productivity, but it will change the way you think about using color in the office. And they all have more speed and power for greater performance. In fact, the Canon Color imageRUNNER will deliver the future of color in the workplace today with the color quality you've come to expect from Canon.

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Q&A Vyatta: No open source guru required

Open source router company Vyatta debuted earlier this year with a Red Hat-style alternative to Cisco and Juniper offerings: the Open Flexible Router, an open source-based WAN router and firewall stack, freely downloadable, with service and support offerings available for purchase. Since then the company has generated buzz while releasing products such as a pre-installed appliance-like version on Dell servers. Vyatta CEO Kelly Herrell and chief strategy officer Dave Roberts recently told Network World Senior Editor Phil Hochmuth what Vyatta is, and is not, and what it hopes to become. (The following is an edited transcript.)

How much future is there in being an open source networking company, given that a lot of what you're doing is packaging free technology that has been out there for some time? Is this something people will do themselves?

Herrell: Companies buy solutions. I don't mean to sound trite like that, but when people look for solutions, they're looking for something that has the best price/performance for the job at hand. We are a solutions provider. I don't know of too many CIOs who would look fondly upon their network teams if they were sitting in labs trying to compile and debug code, or something that was a standard function in their network. So as a solutions provider, we can give buyers what they want: continuity of the product, maintenance, a road map. You're not going to get much of a road map out of an open source project. And all the technical support and service that they rely on to run a network. So we're an open systems alternative to a proprietary approach. From that perspective, we are a solutions alternative, and we believe that has just as much longevity as a proprietary solution.

What are the advantages of open source from a competitive standpoint?

Herrell: We pull from various parts of the open source world, and contribute back, of course. Everything from Linux, and XORP [eXtensible Open Routing Platform — the open source routing software on which OFR is based]. The advantage here is we're standing on the shoulders of giants. Many of the components have been weather tested in many other environments. So we're not coming in at the fundamental ground level where it's a systems theory. So we hit the ground running. And then from our perspective, our job as a solutions provider is to continue to make quick incremental improvements to the solution just to continually advance the state of the solution that we offer.

Why hasn't XORP, and open source routing in general, taken off as widely as open source computing or application platforms, such as Linux or Apache?

Roberts: We're fond of saying that networking started out open source. The first networking stacks were open source stacks with either BSD, or people would run [network] software on Suns. That was a common way to get yourself on the Internet in the 1980s. Then the networking market swung closed source, and went through a period of extreme growth through the 1990s. I think now it's reached a level of maturity where people are willing to go look back at those open source solutions.

The market has to be accepting of what you're doing. We're at a point now where the market has come to the conclusion that open source is good. Customers want to see more open source alternatives in a variety of product categories, not just computing.

To be a Vyatta customer, do you have to be a hacker or open source guru, or have one on staff?

Herrell: Let's say you pick up the Vyatta appliance, or just the OFR software. When you push the on-button of the machine, it boots. When it finishes booting, it is a router, with a CLI and a GUI interface. So the comparisons to Red Hat for us are very apt, in many ways — the subscription model, and the leverage of open source. Where they differ, is that what Red Hat provides is an operating system, then you have to load apps on it, and do all that kind of thing. From Vyatta, the product you get is the same, from a user standpoint, as a traditional router or firewall. You plug in the cables, you hit the on-button, you configure it and you're done.

Roberts: You absolutely do not have to be a hacker to use this product. This is really designed for your average network manager who is comfortable with a Cisco or Juniper product today. They can fire up our products and find themselves very comfortable. One of the things about why open source networking had not, until Vyatta, really caught on was because to a certain extent, the solutions and open source stacks that were out there — XORP and others — do rely on users to be a little bit more of a hacker to deploy them. You still have to download them, you have to run them on your Linux distro. You still have to understand Linux, because it's not like you get a full environment. When you boot up your raw XORP-based system, you have a set of processes running on top of Linux. You have to know Linux commands to maintain the system. That's where a lot of our value-add is; not just taking XORP and plopping it on top of Linux.

What are customers' biggest reservations about going with an open source network product?

Herrell: Change. And I would qualify that by saying that in any market there are different types of adopters. For those who are resistant, that's fine. We'll evangelize and proselytize, but we won't try and force someone to do something they don't want to do. Our job has less to do with dealing with objection and more to do with understanding where the pockets of adoption are.

Roberts: I think everyone gets what we're doing. We haven't talked to anybody that doesn't get it or doesn't see some benefit in it. I've had major Fortune 500 corporations saying, this is really interesting. They've also followed that by saying, I'm not sure I'm ready for it. I'm not sure our organization is ready for it, but I understand it and I understand the benefit of it.

What do you tell CIOs when you talk about Vyatta's road map?

Herrell: We tell them we've got our 1.0 release out there and that 1.1 is around the corner. They should expect it to look like any commercial product. And from that perspective, the road map includes feature advancements and performance enhancements. What is new is the way we come up with the definition of what needs to be in those incremental advancements. That's where we get to leverage the community. We get to leverage their insight and their requests. We don't build something because we think it's a neat-o idea. We build something because the market is telling us they want that.

So who is ready for open source routing?

Herrell: The first adopters are generally categories, are organizations with nimble budgets and nimble deployment models. Who fits under that? Well, [small and mid-size businesses], service providers. People who aren't going to require a long, protracted formalized product review, but rather, a customer that will say, hey, I have a need. You have a solution, I'll plug it in. If it doesn't work I'll take it out.

Roberts: These are typically organizations where there is some empowerment by technical people to make decisions. As opposed to large central planning committees for technology buying.

Herrell: Yes, Stalinist regimes need not apply. But back to what Dave said, I haven't heard any senior IT manager or CIO say, no-way, no-how. What they say is, it's interesting, I'm going to watch this. The bottom line is, no wonder it's interesting, it has two basic advantages — economics and control. How do you say that's not interesting? If you say, I have a very significant network budget, and you can stretch that further. Or, if it gives customers more control over what I deploy, how I deploy it, and when I deploy it. Those are good things. Customer A might say I'm taking a wait-and-see attitude, but I don't disagree with the approach.

For organizations that are in wait-and-see mode, what do you think they're waiting to see?

Herrell: I think the funny thing is that what they need to see already exists; we're just in the process of communicating to them that it does exist. What people like to see is that somebody else has done it. It turns out that a reasonably good-sized number of organizations have already done this, and now have production networks running Vyatta. And it's up to us to explain that and show the proof, if that is the pressing item for them. For the most part, I think that's it. We don't get resistance to the idea; they just want to make sure they're in good company. ■



IBM

_INFRASTRUCTURE LOG

_DAY 15: Our network's too complex to manage. We're not proactive at all; we're just reacting. Help!

_Gil brought in a crystal ball. Says he can now peer into the future of our infrastructure.

_DAY 17: I see a better way: IBM Tivoli middleware. It gives us a holistic view of the infrastructure and analyzes the relationship between apps, systems and networks. Fixes problems proactively for more uptime and more storage availability. Plus, it's open, modular and scalable.

_Gil says he saw all that too but forgot to tell us.



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Your Take

■ NETWORK EXECUTIVES SHARE THEIR WISDOM

How Argonne Labs did an about-face on cybersecurity

Five years ago, Argonne National Laboratory was in the midst of a cybersecurity crisis. The Energy Department research center was failing audits, and management was under pressure to fix the situation. Today, Argonne gets top marks from security auditors. Scott Pinkerton, communications infrastructure department manager, tells Network World Senior Editor Carolyn Duffy Marsan how the organization turned things around.

What's your role at the lab?

The voice and data infrastructure is my primary responsibility. I own much of the network-based security, including firewalls, intrusion-detection systems and virtual private networks. I work closely with the cybersecurity program manager, who is in the same division.

What percentage of your time is spent on security issues?

We just had a large Department of Energy audit this summer, so during that time the percentage was fairly high, about 40% to 50% of my time. In a normal year, it's probably down in the 15% to 20% range.

How many people do you have on your staff involved with cybersecurity?

I have a staff of 23 people, of which three are involved in cybersecurity. They handle firewalls, VPNs, intrusion detection and [Cisco] NetFlow data analysis.

Can you give a brief description of your network?

We support around 3,000 people at the lab and 12,000 computers. We have several high-performance clusters of machines. It's an IP network. We have a lot of wide-area networking connectivity. Right this second, we probably are using six OC-192s. We have a 10G campus infrastructure. We have traditional TDM-based voice. We have an active VoIP pilot program in one of our newest buildings, the Center for Nanoscale Materials.

What does your security architecture look like?

We run a distributed model with multiple firewalls cooperating to provide a perimeter protection scheme. We recently added Tier 2 or divisional firewalls at the project or building level. All the places at the lab that have sensitive technologies or a preponderance of personally identifiable information get a second level of firewall protection. We use primarily Cisco firewalls, intrusion-detection systems and VPNs.

Are you spending more time on security issues than two years ago?

No. Our cybersecurity crisis occurred in 2001. That was the low water mark of our cybersecurity profile. We had suffered through quite a number of audits that were very negative. The federal government's inspector general gave us a bad audit. We had poor audit results from the Energy Department's Office of Assessment. We were under a lot of pressure. We were having weekly meetings with the associate lab director in 2001.

What steps did you take to resolve your cybersecurity crisis?

Before 2001, we didn't have many technical solutions. Firewalls, intrusion-detection systems, VPNs — a lot of that technology didn't exist. However, what I would say was the most telling changes all revolved around culture. We started a cybersecurity architectural review committee to figure out a paradigm for separating our network services.

"Tuning the intrusion-detection system wasn't that painful. It was educating the user community that was hard."

Scott Pinkerton, communications infrastructure department manager, Argonne National Laboratory

We had a slew of town hall meetings throughout that 12-month period. We did an enormous amount of education about what these changes would mean to [the scientists.]

Dropping in the firewalls wasn't that painful. Intrusion-detection systems weren't that painful. Tuning the intrusion-detection system wasn't that painful. It was educating the user community that was hard. We did a complete revamp of our IT training program. We have a yearly IT refresher course that everyone has to go through that was completely redesigned. We did a tremendous amount of outreach to our system administrators and now we keep track of them.

When were you out of crisis mode?

By 2002, we had started to turn the ship around and we were starting to get passing grades on audits. At least from the point of view of the senior management of the labora-

tory, we were out of trouble.

What have you done differently since the crisis was over?

Since 2002, every day we're still asking ourselves what we can do more, better, smarter. We've done a number of things that are very interesting. We re-adapt our intrusion-detection systems every 60 minutes based on the current state of the firewall. We've done a lot to integrate [our devices.] We've been very creative on how we administer network control. Since we're similar to a college environment, it would be too challenging to force an agent on every device. So we scan every 10 seconds for new devices on the network. We keep track of everyone's presence on the network.

What new security initiatives do you have planned?

We're pushing a federated approach to sharing data to help improve cybersecurity. We're asking if it would be valuable for Oak Ridge National Lab or Lawrence Berkeley National Lab if Argonne gave them a summary digest every 30 minutes of the IP addresses that have been hostile here. We're seeing that the people who are hostile at one [Energy Department] lab end up being hostile at others.

Do you feel more confident about security than you felt several years ago?

Yes, because we've been doing fairly well on the audits. However, I'd say that the battle never rests. The threat model is forever evolving. I'm still nervous.

What issues still keep you up at night?

Personally identifiable information is a new problem. For [the Energy Department], it's on the political radar screen. Any incidents involving PII are highly scrutinized. We have a ton of new oversight about what we are doing on the PII front.

What lessons have you learned from your experience improving security at Argonne?

Communication and education have to be No. 1. You have to listen to a lot of people. You have to let them communicate their concerns and worries about these types of changes. Developing willful partners with your user population is important. Talk to your peers to see what other people have done. Don't try to re-invent the wheel yourself. Also, know thy network. We have NetFlow data so we can understand what traffic is on our network. ■

Getting personal: Scott Pinkerton

Title:	Communications infrastructure department manager (since August)
Organization:	Argonne National Laboratory
Responsibilities:	Voice and data networks, network-attached security devices.
Annual budget:	\$5.5 million
Staff:	23
Previous jobs:	Various positions at Argonne, including networking section manager and computer systems engineer. Also served as staff engineer at Martin Marietta Astronautics.
Education:	Master's degree in computer science from the University of Colorado in Boulder; bachelor's degrees in computer science and math from Bowling Green State University.
First PC:	Radio Shack TRS/80 with attached cassette deck storage.
First experience with the Internet:	News groups (netnews).
Home network:	Firewall with four-port switch, wireless access point, two adult computers, two kid computers, two network-attached printers and Tivo with a wireless dongle.





_INFRASTRUCTURE LOG

_DAY 33: Our information is siloed. Unmanageable. People can't access the latest info to make decisions. Gil's resorted to giving everyone access to everything all at once.

_Monitors now outnumber humans 18 to 1.

_DAY 36: It's clear to me. We need an IBM Information On Demand middleware solution. Info will be liberated from the silos—available when we need it, whatever the format. Accurate and in context. Now we can make smarter decisions and deliver real business value.

_Access is a beautiful thing.



Information Management

See innovative IBM Info Management solutions in action:
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Consultants

continued from page 1

consultants who also got their starts building switching equipment, setting up networks and putting out fires on the front lines of IT.

"Nobody can know how IT interoperates with the business as intimately as someone within that business, because they eat, live and breathe it all day long," says Zeus Kerravala, senior vice president of enterprise research at Yankee Group. Kerravala started working as a Unix programmer at Canada's University of Victoria and moved into enterprise companies, including investment banking firm Alex Brown.

"Having this experience gives me credibility and helped me a lot early on. I know it's not just about speeds and feeds; people don't really just buy off that, it's just one part of the equation," he says.

Takes one to know one

Having spent time as a practitioner makes it easier to establish a rapport with clients who need advice about how to run a project, says Mark Nicolett, a vice president and research director at Gartner covering security and privacy.

Nicolett worked at several insurance firms in the Hartford, Conn., area until he spent 15 years at Aetna, working on projects such as disaster recovery and client/server management systems. Now with 10 years under his belt at Gartner, Nicolett says he still works to keep his technology knowledge fresh, even if he doesn't get the chance to touch technology daily.

"Any IT practitioner, regardless of their background or current position as an analyst, faces technical obsolescence and must refresh their skills. But as an analyst, you have to adjust to a situation where you are not placing your hands on technology," Nicolett says.

Not only does the hands-on experience lend analysts credibility among user organizations, but it also instills in them an ability to attack business and process problems with technology. Thinking like a technologist translates into the analyst role, some say.



"I knew the guy selling the alumni their tickets to basketball games could have had me fired on a dime if his systems weren't working."

Joe Skorupa, research vice president, Gartner

"In principle, working as an analyst is not far from working as a software architect. You just have to adapt your conceptual and logical skills to another type of process," says Jean-Pierre Garbani, a vice president with Forrester Research.

Making the leap

Considering a move from manning the trenches to spotting trends?

Network: Many IT gurus moved into consulting or analyst work after a former colleague or friend made the leap. "Never burn a contact," says Zeus Kerravala, senior vice president of enterprise research at Yankee Group.

Listen: Listening skills are critical when managing hundreds of clients and trying to understand each client's unique problems. "Your opinion isn't the most important or even knowledgeable opinion anymore when it comes to the issues inside an end-user organization," says Peter Sevcik, president at consultancy NetForecast.

Talk: Analysts need to be able to present their technological know-how in

common terms to large groups of people with mixed levels of knowledge. It can be a challenge to represent opinions simultaneously as both relevant and accessible. "You have got to be comfortable in front of an audience anywhere from five to 500 people and in some ways, just be able to let go," says Joe Skorupa, a research vice president at Gartner.

Write (a lot): Analysts are required to put their knowledge of an entire technology area or market into writing yearly, quarterly, weekly and in some cases daily. "The skill sets to be an analyst are not necessarily developed in the course of daily work as an IT practitioner, so

you have to take any opportunity you can to write," says Mark Nicolett, a vice president and research director at Gartner.

Think broadly: Just as important as knowing a technology is understanding its impact across an industry. "What jazzed me about being an analyst was getting the bird's eye view of the industry. You take that greater clarity of working in the trenches, expand it beyond an individual project, and see technology as it fits into the whole picture," says Christopher Voce, a researcher at Forrester Research.

— Denise Dubie

Garbani started in IT at a small company in France that was automating control processes of nuclear power plants and moved to Bull GE, where he developed networks and transactional systems. Garbani also took part in launching a software company, but ultimately made the leap to analyst after two of his colleagues in IT at John Hancock moved into the area and lured him to the other side.

Garbani can still recall how he perceived consultants and analysts when he was in the trenches and works to avoid coming across that way to his clients. In addition, his past life as an IT professional gives Garbani a healthy dose of cynicism when evaluating vendor pitches.

"I remember trying to make sense of Gartner or Giga reports and finding them lacking in details and sometimes downright inaccurate," he says. "I now know how it is done: the politics, budgets and influences. I have been there, and it has not changed in all these years. I know the B.S. that is served to analysts [by vendors]. I did it myself."

Projects Agency in Washington, D.C., led to the dividing of the Arpanet into multiple networks and the beginning of today's Internet. "I pulled the switch



"I remember trying to make sense of Gartner or Giga reports and finding them lacking in details and sometimes downright inaccurate. I now know how it is done: the politics, budgets and influence."

Jean-Pierre Garbani, vice president, Forrester Research

along with Col. Heidi Heiden at noon, Oct. 4, 1983," he recalls.

But more important for his work today, Sevcik says he remembers the politics within an organization that makes technology adoption a challenge. He keeps that with him when trying to help user organizations solve a business problem with technology.

"Consultants and analysts don't always take into account the organizational inertia that exists in companies," says Sevcik, who today is president at NetForecast, a consultancy that specializes in application performance and real-time traffic analysis. "In order for some new technology to succeed, it will require supportive processes and dealings with other parts of the organization that maybe have never been dealt with before."

Despite the benefits these industry watchers gained in their early IT roles, some say transitioning out of IT and into network industry research wasn't necessarily a natural or easy process. For many, the move required honing business, communications, presentation and writing skills — and even sharpening their technology skills.

mill and relaxing into consulting work, but it doesn't always represent a steady paycheck, and you don't always lose that boss you wanted to escape. You get more bosses — your clients."

For some, the transition represented a bit of an ego check.

"You think consultants don't know much when you're in IT. You think you know a lot about technology, but what you know is a lot about how technology is deployed in your organization. That was a big — and very rude — awakening for me, and it took me a while to ramp up," says Yankee Group's Kerravala. "You have to be comfortable giving up the hands-on technical edge that you once had."

Others say that while they miss the daily contact with technology, becoming an analyst gives them the opportunity to broaden their knowledge by talking to many end-user organizations about their large-scale implementations.

"The nice thing is I get to work with a lot of folks that are working with a lot of technologies, more than I could work with in IT on my own," Gartner's Skorupa says. ■



_INFRASTRUCTURE LOG

_DAY 44: This lack of productivity is out of control. What we're using isn't working. Gil's had enough. He moved everyone into one cubicle. A "collaboration" cubicle. We need a better idea.

_DAY 46: I'm going with IBM Lotus® Notes® and Domino®. It's more than e-mail; it's an open platform designed for collaboration. It has proven security features and productivity enhancers like document sharing and custom app development. And it's flexible enough to integrate across multiple platforms, including J2EE™ and Linux®.

_OK, who sat on my lunch?



Lotus.

Download the Lotus Notes & Domino demo at:
IBM.COM/TAKEBACKCONTROL/COLLABORATION

Companies tackle telecom expenses

TEM vendors claim they can save you money, but picking the right company is challenging.

BY DENISE PAPPALARDO

Last week we highlighted five telecom expense management vendors to watch. Here are five more:

ProfitLine

Founded: 1992

Headquarters: San Diego

Leadership: President and CEO Stephen Hundley joined the company in April from Accenture, where he most recently served as executive director and COO for Procurement Solutions. Rick Valencia, chairman and chief strategy officer.

What it sells: BPO services based on its MyTelcoManager Web platform for telecom life-cycle management, from choosing a carrier to paying bills.

Differentiators: ProfitLine is believed to be the biggest TEM vendor. . . . Boasts an integrated wireline and wireless platform.

What others say: "One of the problems with the bigger professional service companies is many are suffering from serious merger and acquisition integration problems," says Lisa Pierce, a vice president at Forrester Research. "ProfitLine is one that does not." "The company is unique among the larger outsourcing TEM firms in that it owns its own wireless TEM company," Pierce says. Gartner concurs, saying ProfitLine supports both platforms "really well." It also says ProfitLine needs to improve its business intelligence capabilities and says customers are asking for more "investments in professional services."

Cost: Uses different pricing models for wireline and wireless telecom engagements. Wireline customers can expect to pay about 2% of their annual telecommunications expenses. Wireless customers can anticipate spending \$5 to \$15 per month, per device.

Potential savings: A "reasonably conservative" figure is 3% to 7% savings on wireline TEM. Optimizing voice and data networks from sourcing to procurement can result in 15% to 30% cost reductions, the company says.

How company got started: Initially helped other firms control costs for all aspects of their business. With so many clients looking to reduce telecom expenses, ProfitLine began focusing on that exclusively around 2002.

Origin of company name: Vallencia's wife came up with the name with the idea of helping to create more profits.

Customers: U.S. Postal Service, Delta Airlines.

Funding: Raised \$15 million in its B round

of venture funding; investors include Menlo Ventures and FTVentures.

Quickcomm Software Solutions

Founded: 1997

Headquarters: New York City

Leadership: Founded by CEO Mark Evans and Head of Product Development Terry Healy, who have more than 40 years of experience in telecom between them.

What it sells: Telecom Expense Management Software that includes automatic reconciliation of telecom bills down to line items, reports of charges not in your inventory or by personnel no longer with the company. Allocates expenses to cost centers and analyzes usage to guide provisioning and optimize

networks. The company licenses its software and offers it as a service.

Differentiators: Works with 200 carriers around the world and has invoice translators or parsers for all. . . . Guarantees it will keep up with all carrier invoice changes within five days. "We'll create a new translator from scratch or fix a change in an existing one. We guarantee that, and it's really critical," Evans says. Supports wireline and wireless TEM. . . . CSC licenses Quickcomm's software and uses it as the basis of its TEM practice, Evans says.

What others say: Multinationals should consider Quickcomm, says Eric Goodness, vice president of research at Gartner. "Quickcomm was born in Asia Pac," working closely with Telstra, BT and other international carriers, he says. "This gives them a little bit of an edge in terms of depth of relationship with carriers, and that counts."

Cost: "We want to charge big customers more than small because they require more support and more translators," Evans says. The figure is based on a percentage of overall telecom spend. Quickcomm's software-as-a-service is based on a monthly subscription fee that works out to be 0.5% to 1% of a customer's annual telecom spend.

Potential savings: Based on third-party consulting firms, Quickcomm customers generally can expect 10% cost savings in the first year.

How company got started: In Australia in the early 1990 Evans says he was inspired to develop software that would help clients reconcile their bills. In 2003, Quickcomm saw its first American customer and has been moving west ever since.

Origin of company name: Was one of many names considered; it worked out from a legal standpoint.

Customers: Citigroup, Kraft, BP, Merrill Lynch and CSC.

Funding: Self funded with the exception of one entrepreneur from Australia named Roger Allen.

Rivermine

Founded: 2001

Headquarters: Fairfax, Va.

Leadership: CEO and President Mark Logan has 20 years of sales and management experience in software; previously served as vice president and general manager of PeopleSoft's CRM business unit.

What it sells: Inventory Engine, Service Order Manager, Finance Manager and Clarity software, which makes up the bulk of its business, plus software-as-a-service and managed outsourced services.

Differentiators: The fact that "our roots are around software delineates us," says John Shea, vice president of marketing. . . . New Clarity package, which provides dashboards and reporting tools. . . . Has created benchmarks based on real customer data (keeping customer names private). . . . Supports wireline and wireless TEM. . . . Has business relationships with two large BPO firms, including Accenture.

What others say: "They are one of the strongest players in terms of inventory management, ordering and provisioning," says Gartner's Goodness. He says the company has a good number of customers in the Fortune 500. He points out that Rivermine is not a good fit for small companies, as its platform "is harder to scale from a price point down to smaller companies." Core invoice auditing is the company's biggest weakness, Goodness adds.

Cost: Typically 1% to 3% of a company's annual telecom spend, although this varies based on the amount of money a company spends, plus managed service fees for those buying more than software licenses.

Potential savings: Rivermine runs a customer's information against its database of like customers to give a feel for how big savings could be. On average, savings fall in the 7% to 25% range.

How company got started: Originally called Cicat Networks, then changed its

name to Telco Exchange before becoming Rivermine in 2001. Cicat was a value-added reseller of carrier network services that over time focused on optimizing and automating carrier services — expertise that evolved into the Rivermine software.

Origin of company name: Comes from the idea of how information flows through an organization, like a river. The idea of "how powerful" mining that information is to an enterprise makes up the back end of the company name, Shea says.

Customers: Marriott, Fidelity Investments, IKON Office Solutions and Starbucks.

Funding: Investors include Valhalla Partners, Columbia Capital and Longworth Venture Partners, with the last round of funding in June 2005 totaling \$10 million.

Symphony Spend Management Solutions

Founded: 2002

Headquarters: Palo Alto, Calif.

Leadership: President Alan Harlan came on board in 2004 and brings 20 years of experience in IT and outsourcing.

What it sells: EMS 11 software suite, which includes asset, invoice and usage management, financial allocation, strategic sourcing, audit and recovery and reporting. The company licenses its software, offers it as a service and supports full outsourcing (the business is split roughly along those lines).

Differentiators: "From a revenue standpoint we are in the top five," Harlan says. "We are financially strong and we are a global company, which is a major differentiator when selling to large financial institutions. None of our competitors are profitable." The company has a global presence and is the exclusive partner for Verizon Business' TEM offering. Also works with AT&T, which Harlan says is its biggest client.

What others say: "This [Verizon] partnership will bring them significant deal flow [and] help them establish new capabilities going forward," says Joe Basili, research director at Aberdeen Group. Symphony has large customers beyond the carriers, he adds.

Cost: Depends on whether a customer is a TEM newbie, experienced or in between.

Potential savings: Customers can expect to reduce expenses between 8% and 13%, with more-experienced TEM customers on the higher end of that range.

How company got started: Through acquisitions. Parent company Symphony Services acquired TEM vendor Telco Research in 2002. In 2003 and 2004, the company bought Teletron and Stonehouse, respectively.

Origin of company name: Comes from the parent, plus the fact that SSM handles all phases of TEM.



nww.com

First five

If you missed last week's list of the first five telecom expense management companies to watch, check out the entire list online.

www.nwdocfinder.com/6335

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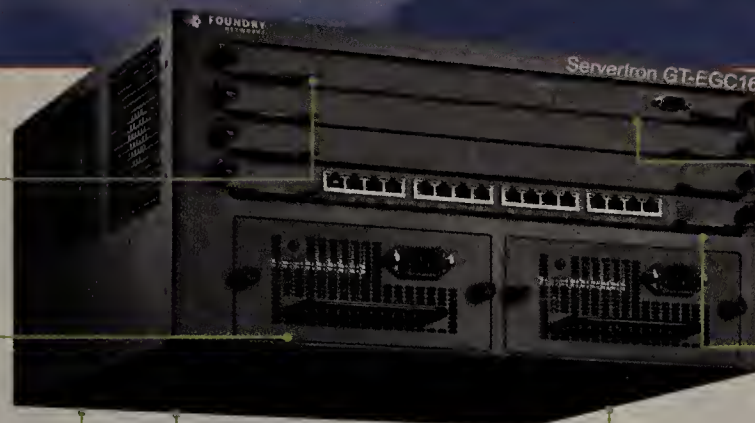


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HARDWARE-BASED CONNECTION MANAGEMENT AND DOS PROTECTION	✓	✗
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TOLLY ON TECHNOLOGY
Kevin Tolly

Living in the post e-mail world

I'm sure that there are countless others who also have continued to hammer away at projects with the same trusty tool — e-mail.

The new tool? Collaboration. OK, it isn't new, but for me at least, its time has come.

Lotus Notes creator Ray Ozzie has been in the collaboration groove since he, well, created Groove a number of years ago. Now part of Microsoft, this virtual office environment lets teams "share files, manage meetings and projects, track data and processes, and get work done as if you were all in the same location."

Collaboration systems such as Groove enable the type of interaction and sharing that you can't do when your tools consist of just an in-box and a server share. And, because you probably don't want outsiders having access to your server shares, you often find yourself limited again to e-mail.

Early implementations of Groove, as with any significant new platform, had limitations and bugs. The lack of broadband speeds years back often made file synchronizing impractical because of the slow-motion nature of narrowband connections.

That restriction is gone and it is quick enough to sync up even multimegabyte files. Over time,

mechanisms for keeping shared data in sync and allowing transmissions of "updates only" have made the process quicker and more reliable.

Software-as-a-service also has emerged as a viable way to implement everything from CRM to collaboration. Thus, the planning and effort needed to prototype a collaboration suite has disappeared.

While I haven't investigated Microsoft's Live Office, one would imagine that its Collaboration

offering is a packaging of the Groove technology and offers a quick way to explore collaboration.

Central Desktop (www.CentralDesktop.com) is a third-party hosted collaboration solution. (The Tolly Group has no affiliation or relationship with it.) We've worked with it and found it to have all the essential features we need for various collaborative projects.

It has workspace templates for common types of projects to get

going in minutes but also lets users customize workspaces to suit individual project needs.

E-mail is not going away, but rather than running your project, it is much better suited to the task of notifying you of updates to your collaborative, groupware project.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

I give up. After almost two decades of e-mail being my quintessential business tool for managing people, projects and processes, I have to admit that it no longer is up to the job. It is time for me to deal with the fact that we are living in a post e-mail world.

With the exception of mobile messaging — please, I need some e-mail downtime — I've tried it all. I triaged my messages using folders, flags and follow-ups to keep things organized. I jumped on-board to use the Lookout search engine for Outlook before Microsoft bought the company. I try to take advantage of every useful feature available.

But I'm convinced that you just can't manage via e-mail anymore.

Perhaps you are thinking: "Tolly, where have you been?" My answer is that it's so ingrained to use e-mail that my approach to managing more projects has always been to use more e-mail.



NET INSIDER
Scott Bradner

Copyright law: small changes

look good, but you have to be mostly impressed by what the Office managed not to do.

I've had rather nasty things to say about the DMCA (www.nwdocfinder.com/6336, /6337 and /6338) in the past, all of them very well deserved. A particular problem with the DMCA is its almost absolute prohibition of circumventing technology that a vendor can claim is protecting copyrighted material. The prohibition does not take into account any mitigating factors.

The DMCA does provide an escape mechanism, though. Every three years the U.S. Copyright Office takes a look to see if some particular cases can be exempted from the legal prohibition. The Office just finished its latest review and has added a few more exemptions to the very short list that came out of the previous reviews.

The new report (www.nwdocfinder.com/6339) exempts six classes of copyrighted works.

- Use of audiovisual works in a college or university in making classroom materials if done by media studies or film professors.

- Archiving computer programs or video games where readers are no longer available.

- Renewed the exemption for the use of dongle-protected computer programs when the dongles are no longer available.

- Renewed the exemption for ebook materials that block the use of screen readers (for example for the blind).

- Firmware in cell phones for the sole purpose of switching to a new carrier.

- Systems like the Sony rootkit to research the problems and correct security flaws.

These exceptions are all very narrow — for example, limiting the exception for the educational use of audiovisual material to higher ed and to media studies or film professors. But this result was quite predictable.

Why not just rule that a user can circumvent the protection on anything that he owns where the vendor is no longer manufacturing equipment that can access or enable it (as long as it's for the user's own use)?

But I do not expect that sort of thing out of the Copyright Office — you see, that would be a "principle" rather than a narrow exception and I'm not sure the office understands the concept of principles.

Some of these exceptions are quite useful, even though they are narrow, but at this rate you and I will be dealing with the DMCA blocking good technology and good security until long after we retire.

Disclaimer: I'm sure Harvard will outlive the bad effects of the DMCA (I'm not sure I will), but I have not seen any university comment on the Copyright Office (in)action.

Bradner is Harvard University's Technology Security Officer. He can be reached at sob@sobco.com.

Telecom

continued from page 34

Customers: LaQuinta Hotels, JP Morgan Chase, Morgan Stanley, Tickets.com.

Funding: Comes from Symphony Services, which is privately held and funded by Symphony Technology Group, a holding company and TH Lee Putnam Ventures.

Tangoe

Founded: 2000

Headquarters: Orange, Conn.

Leadership: CEO and President Albert Subbloie, who has been in the telecom industry for more than 20 years.

What it sells: Communications Management Platform (CMP) software that lets customers monitor, analyze, manage and control a range of TEM processes from one application. Also offers software-as-a-service and BPO services.

Differentiators: Tangoe is investing \$7 million in research and development this year and Subbloie says that represents two to three times more than any of its competitors.... Has an extensive partner program with 20 outsourcers around the world.... Well versed in dealing with international service providers, handling 100 to 200 bill translators,

according to Subbloie.... Uses workflow tools and a provisioning model to help companies spot leakage, which is paying more for a circuit than a contract dictates or paying for wireless phones for employees.

What others say: Gartner says the company signed the largest TEM deal of 2006, with a financial services company that spends \$250 million annually on telecom.

Cost: Ranges depending on whether the customer opts for a basic or simple TEM setup and how much it spends annually on telecom. For a company that spends \$20 million to \$30 million per year, it might need to pay 1% to 1.5% of that to Tangoe. Companies that spend less than \$10 million might spend a little higher percentage.

Potential savings: Single percentages up to 20%.

How company got started: Subbloie started the company six years ago with the idea of offering businesses tools to better manage their telecom inventory and expenses, and released Version 1.0 of CMP in 2002.

Origin of company name: Represents the dance between carriers and their customers.

Customers: HP, Comcast, ADP and McKesson.

Funding: Just raised \$8 million; investors include Edison Ventures, North Atlantic Capital and Axiom. ■

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VoIP Performance Management:

From edge to core, nobody can manage your VoIP performance in a converged environment like Fluke Networks

Fluke Networks' VoIP Performance Management approach is unparalleled with the breadth of visibility and depth of analysis our solutions provide including executive level reporting to drill down analysis troubleshooting. Our solutions enable organizations to successfully deploy and manage VoIP to leverage its benefits without negatively impacting data performance within a converged network by maximizing visibility throughout the enterprise.

As the only vendor to provide edge-to-core visibility through all aspects of the VoIP lifecycle from pre-assessment to ongoing monitoring and management to planning for future growth, we support the management of VoIP, data applications and the general network infrastructure. This is critical to enterprise performance management as voice and data converge, since each has the potential to impact the other. Having network, application, and VoIP-specific analytics allows you to clearly see how data traffic is affecting call quality, and how VoIP traffic is affecting data quality, a significant advantage over products that look only at voice.

VoIP Performance Management:

Lifecycle solutions from edge to core

Having a strategic plan for managing VoIP performance is essential to success. At Fluke Networks, we've built our VoIP solutions to give network managers edge-to-core visibility to manage the entire VoIP lifecycle – from pre-deployment assessment, ongoing monitoring and management, optimizing and planning for future growth. Our solutions enable you to measure infrastructure effectiveness, converge voice and data, build out and transition new networks, and quickly zero in on application performance issues.

We call this approach AMMO – Assess, Monitor, Manage and Optimize – a disciplined set of best practices that leverage the benefits of high-performance VoIP in a converged network and maximize the value of the entire infrastructure.

Assess

Is your infrastructure prepared to deploy and support VoIP? Without a complete assessment of your network infrastructure from LAN and WAN to desktops and phones, you risk major performance issues – both with existing applications and with your VoIP rollout. The steps you take to optimize VoIP in this first phase will lead to smoother deployment, higher performance and fewer problems throughout the entire VoIP lifecycle. Fluke Network VoIP solutions support the pre-deployment best practices needed to:

- Assess network readiness.
- Observe conversations between phone and network.
- Verify deployment.
- Establish a performance baseline.

Monitor

Does your VoIP call quality meet your goals? Do you have the network visibility to address VoIP issues before they affect end users? Once you've deployed

VoIP, monitoring actual, detailed traffic – both voice and data – is essential to isolating and managing performance issues proactively.

The key to proactive monitoring is in identifying potential issues before performance is actually degraded and impacts end users. Having a standing monitoring solution in place also gives you a complete performance history, so you can quickly identify root causes and reduce MTTR. Ongoing monitoring can be conducted from the core, individual routers, distributed points on the network, and WAN links.

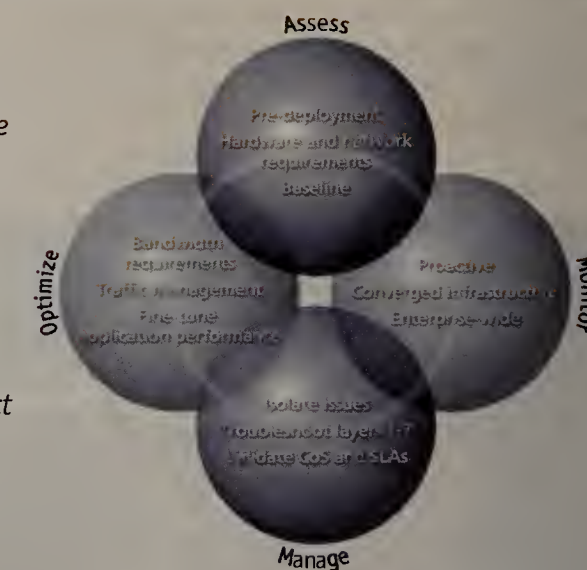
Manage

VoIP problems have many causes – from physical problems on the local loop to an over-utilized port to mis-configured class of service (CoS) settings or high levels of jitter within the voice application itself. Fluke Networks' broad management and troubleshooting strategy gives you visibility from the edge phone to the WAN link, between remote locations, and from the core across the vista of your entire network. This is critical to isolating the cause of degradation and reducing MTTR when seconds and minutes saved often go straight to the bottom line.

With VoIP, it is especially important to find and resolve intermittent problems before they grow and impact more users. Our solutions enable network managers to troubleshoot issues ranging from the local loop to the port to service level parameters across every site.

Optimize

Making the most of VoIP is an ongoing process that requires capacity planning and traffic management, baselining performance, and continuous improvement. Ultimately, it's a matter of visibility and control. For an IT manager with a converged network, edge-to-core management information is critical to making control decisions that improve performance. Instead of guessing what might be impacting performance,



granular visibility is needed to help make informed decisions such as:

- Increasing bandwidth to handle additional usage caused by VoIP.
- Leveraging and fine-tuning CoS capabilities with an MPLS deployment.
- Improving service level parameters from the service provider.
- Shaping traffic so the most business-critical and delay-sensitive applications have priority.
- Eliminating recreational applications such as file sharing and streaming media.
- Building the physical infrastructure to meet the new demands for a converged network.

Essential edge-to-core visibility:

Only from Fluke Networks

Fluke Networks developed our VoIP Performance Management approach as part of our Enterprise Performance Management philosophy, which brings together partnerships, products and best practices that lead to high-performance networks – and enterprises. We are committed to helping enterprises deliver superior application, voice, and infrastructure service by maximizing network visibility and information intelligence through monitoring and managing performance across the LAN, WAN, and multi-tier network environments.

For a closer look at the essentials to VoIP success and the only suite of products that support the converged network with edge-to-core visibility, just visit the VoIP Performance Management Solution Center web site at www.flukenetworks.com/voip – or call customer service at 1-800-283-5853.

For more information

To learn more about application performance management solutions, visit www.flukenetworks.com/APM

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TECHNOLOGY UPDATE

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

Making wide-area file services secure

BY MARK URBAN

One of the most important security provisions in Microsoft's ubiquitous Common Internet File System is Server Message Block signing.

SMB signing is a form of packet authentication. After users of a CIFS-based application are authenticated, SMB signing adds a digital signature to each packet transferred between client and server. The signatures verify that the identity of the server matches the credentials expected by the client, and vice versa. By verifying that every packet received comes from an authenticated source, the signature ensures the integrity of all communications.

The hashing algorithm used to create the digital signature adds noticeable computational overhead to the client and the server. On a high-speed LAN, Microsoft estimates this overhead to be 10% to 15%. But this layer of security is considered unnecessary on the LAN, and to maximize throughput, many organizations disable the SMB signing feature of CIFS. Or the server might have SMB signing enabled but not required, meaning any client with SMB signing disabled can still communicate.

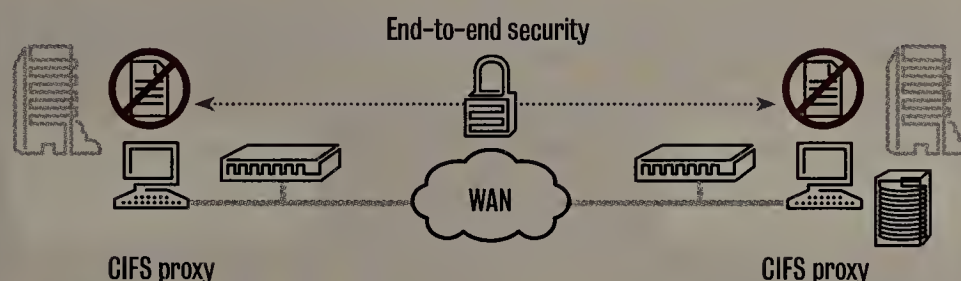
The situation is different in the WAN, however, where traffic is vulnerable to man-in-the-middle attacks and hijacking. The need for SMB signing with wide-area file services (WAFS) solutions has been heightened recently with the widespread availability of a hacker tool called SmbRelay that automates a man-in-the-middle attack against the SMB protocol.

Signing protects against SMB session hijacking and other tampering by prevent-

HOW IT WORKS: WAN acceleration for Common Internet File System



Spoofing-based acceleration: Digital signatures change when the payload is not restored to its precise original contents. Requires disabling Server Message Block (SMB) signing to accelerate CIFS traffic.



CIFS proxy: SMB signing operates on LAN at both ends of the connection. Separate security provisions are employed across the WAN. Allows CIFS traffic to be both accelerated and secured transparently.

ing a network tap from interjecting itself into an established session. SMB signing should therefore be considered a best practice for securing WAFS-based solutions that extend CIFS across the WAN.

There are two problems that the enterprise often encounters with WAFS solutions. The first is their failure to require (vs. merely enable) SMB signing. The second

problem occurs after SMB signing is required, and session failures and/or poor WAN performance ensue. The computational overhead is not the culprit here. Rather, the problem results from the inability of some WAFS solutions to compress or otherwise accelerate digitally signed traffic in a fully reversible fashion.

In-line network-acceleration products

that rely purely on traffic-interception techniques to implement protocol spoofing and packet compression, for example, can interfere with SMB signing because they don't restore the payload to its precise original contents. A change of just a single bit alters the result of the hashing algorithm that computes the digital signature. Accordingly, this class of products may force organizations to make a trade-off between WAN security and performance.

A more compatible way to implement WAFS for CIFS is a proxy that terminates the CIFS exchange at both ends of the connection. The proxy handles verification of the digital signatures at the source in the LAN, transmits the packets across the WAN, and then reestablishes a CIFS session with SMB signing at the destination. Of course, proxy-based solutions must ensure that packets traversing the WAN are signed or encrypted — or both — to preserve the security afforded by SMB signing.

The proxy approach also benefits the enterprises that deploy WAFS appliances by maintaining compatibility with other CIFS security and integrity features. These features include authentication with a challenge-response handshake, share-level protection and distributed file locking, read/write caching, and journaling and recovery provisions. By supporting Microsoft's CIFS in its native mode, enterprises need not sacrifice WAN security to improve WAN performance.

Urban (maurban@packeteer.com) is director of product marketing at Packeteer based in Cupertino, Calif.

Ask Dr. Internet

By Steve Blass

Are there any free, open source Secure Shell and Secure File Transfer Protocol clients that provide a drag-and-drop interface for remote file transfer and have a license that allows commercial use?

The Target Management subproject of the Eclipse Device Software Development Platform project recently released a product called the Remote System Explorer that supports SSH and SFTP file transfer. Remote System Explorer provides a tool kit

for working with remote computer systems and files. Install the Eclipse platform run-time binary from www.nwdocfinder.com/6331 and follow the instructions for installing the Remote System Explorer found at www.nwdocfinder.com/6332. Once installed, Remote System Explorer lets you connect to remote systems using SSH and displays a tree view showing remote and local folders and files where you can drag and drop — or cut and paste — files between local and remote systems. In addition, you can open remote files for editing by double-clicking the remote

file in the folder view. Using the save command on an opened remote file saves the file back to the remote system, or you can save the file to the local system. Remote System Explorer is more than an SSH client, but the SSH file browsing, copying and editing capabilities alone make the package worth taking a look at even if you have never used Eclipse before.

Blass is an IT manager in Phoenix. He can be reached at dr.internet@jschnee.com.



GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Capsa captures and cooks net comms

We have tested products from many countries but today we have a first: a Windows network packet-capture and protocol analyzer from China. Capsa Enterprise is made by Colasoft and we are very impressed!

The core features of Capsa Enterprise provide real-time packet capture, in-depth protocol analysis, automatic network-event diagnosis and reporting. Beyond looking good, what makes this product stand out is the depth and range of the ways it

analyzes captured network packets.

Capsa Enterprise monitoring sessions are set up as projects. A project consists of the adapters to be monitored, the filters used to restrict the endpoints and protocols that are tracked, the diagnosis analyzers (routines that watch for and analyze events that are not to specification) that are to be applied, and other options.

You can specify how big Capsa's buffer should be and whether the buffer is used as a circular (ring) buffer or a linear buffer. The linear buffer simply stops capturing packets when the buffer is full, keeps the buffer and analyzes new packets that then are dropped, or it dumps the entire buffer, keeping the stats gathered up to that point, and starts refilling the buffer.

While packet capture is proceeding, you can examine the data from multiple viewpoints. The user interface is divided

into a Project Explorer panel on the left and a reporting panel on the right.

In the Project Explorer, you can select the entire project or a project subset by protocol, by physical address and by IP address. Each of these groups is broken down further. For example, the protocol group has Ethernet II and Ethernet 802.2 subgroups, of which the former in turn has IP Address Resolution Protocol subgroups. The IP subgroup has TCP,

Capsa Enterprise is an enormous, well-engineered, technical . . . product.

Internet Group Management Protocol, User Datagram Protocol and Internet Control Messaging Protocol subgroups and so on.

When you select a group, a subgroup or a final item (a protocol, a physical connection or an IP address), the reporting window displays the related data. You select the views of the data by tabs.

The Summary tab shows, for example, an analysis of packet sizes; and traffic inflow and outflow in bytes, packets, utilization, bits per second and packets per second.

The Diagnosis tab shows notable events, which are classified as notices, information, warnings or critical events. A summary of events at the top of the pane is divided into sections covering all events, just application events, just

transport events, and just network events and listing each observed type of event and the total times it was seen.

Clicking on an event section or specific type lists all observed events in detail in a tabbed subpane below the summary. When an event type is selected, a new tab appears in this subpane and shows the explanation of the event.

Double-clicking on an event will bring up a protocol-decoder window that breaks the packets down to bit level.

There are also tabs for analyzing endpoints, protocols and conversations, and a list of packets and logs.

Capsa Enterprise also includes Packet Builder, which helps you create custom packets, and Packet Player, which transmits packets. There's also a Mac scanner and a ping tool. The combination of Capsa Enterprise and its bundled tools provides just about all the tools you need for exercises such as intrusion testing and performance analysis.

Capsa Enterprise pricing starts at \$499 for a single-user license without maintenance (www.nwdocfinder.com/6333). A simpler Professional Edition starts at \$299 without maintenance. It supports only projects with one Ethernet adapter and leaves out such features as reporting and graphing (www.nwdocfinder.com/6334).

Bottom Line: Capsa Enterprise is an enormous, well-engineered, technical and highly professional product that provides almost everything you could want for network and protocol analysis and reporting at a reasonable price.

Tell us what you want at gearhead@gibbs.com or on Gibbsblog.



CoolTools

Quick takes on high-tech toys. Keith Shaw

The scoop: Treo 680, by Palm and Cingular, about \$200 (plus monthly service and two-year agreement)

What it is: The latest smart phone (converged PDA organizer and cell phone) from Palm operates on the Cingular Enhanced Data for Global Evolution (EDGE) wireless network, and is aimed at consumers and business users who have feature-rich cell phones but not smart phones. The quad-band phone lets users make calls from six continents — more than 190 countries — with wireless data roaming available in more than 115 countries.

Users can access their e-mail through Cingular's Xpress Mail application, Microsoft Exchange Active Sync, Good Mobile Messaging from Good Technology, and POP3 or IMAP accounts. Other features include a 1.3-megapixel digital camera-camcorder, digital music player (via the Pocket Tunes application), and support for the TeleNav GPS Navigator (with the use of a separate Bluetooth GPS receiver).

The device runs Version 5.4.9 of Palm OS and has 64MB of memory for user storage and 320-by-320-pixel resolution. The system includes Bluetooth 1.2 for hands-free headset connectivity and a memory card slot for a MultiMedia Card, Secure Digital (SD) or SD I/O cards. The device's removable and rechargeable lithium-ion battery provides as much as four hours of talk time and as much as 300 hours in standby mode.

Why it's cool: Cingular customers have had to look on with envy while Verizon and Sprint customers use devices like the Treo 700p, 700w or 700wx. The Treo 680 gives them the latest version of the smart phone that operates on Cingular's EDGE network. The only hardware innovation is the elimination of the antenna nub at the top of the device — the antenna now is integrated into the device, making the Treo 680 slightly smaller than its Treo 700 cousins.

Some caveats: Because the device connects to Cingular's EDGE network instead of the higher-speed Evolution Data Optimized network from Sprint or Verizon, aver-

age download speeds were much lower than when I tested the 700p or 700w devices. With the Treo 680, I averaged about 191Kbps, much lower than the 820Kbps I got with the 700p on Sprint's network earlier this year. The Treo 680 may appeal to users who appreciate the lower price and don't mind the lower data download speeds. For example, users who want just to download their e-mails and do some basic Web surfing probably won't notice the lower speeds. If they're looking to do multimedia streaming, they'll notice. Still, this is an upgrade for Cingular users from the Treo 650, which could access only GSM and General Packet Radio Service networks.

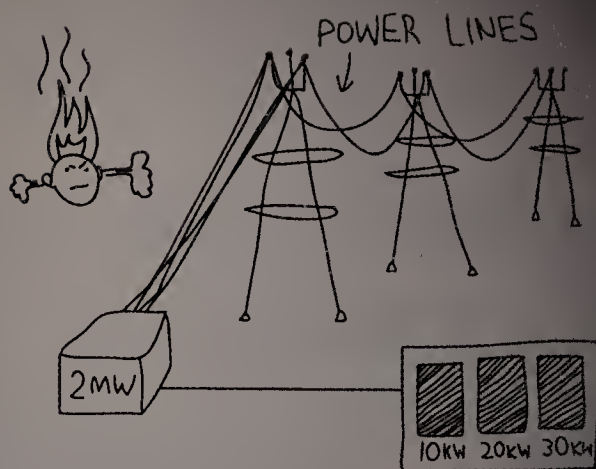
Another disappointment is that Cingular offers only the graphite version — if you want to get the Arctic, copper or crimson versions, you have to buy an unlocked version from Palm and transfer your Subscriber Identity Module card.

Grade: ★★★ (out of five)

Shaw can be reached at kshaw@nww.com. New Cool Tools Video Show every Thursday, and Twisted Pair Podcast every Friday at www.networkworld.com.



Cingular plays catch-up with its Treo 680 smart phone.



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TINY JET ENGINE
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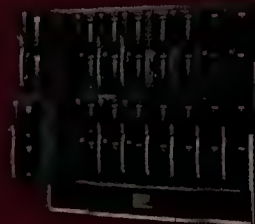
**YOU'VE ALWAYS BEEN
COOL UNDER PRESSURE.
YOU JUST NEEDED SYSTEMS AS
CONTROLLED AS YOU ARE.**

The HP BladeSystem c-Class with Thermal Logic Technology.

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Two industry experts debate the effect image spam has on networks.

FACE-OFF

Is image-based spam a nightmare facing enterprise networks?

Yes

by Patrick Peterson,
IronPort Systems



“Image is everything,” or so the saying goes. For more than 1 trillion spam messages sent since April (yes, that’s 1,000,000,000,000), image has literally been everything. No text, no numbers, no hyperlinks in these spams; just an image. True, there are commercial solutions to combat this nightmare, but much of the enterprise market and most e-mail users worldwide are not yet protected by any of these solutions. Some vendors believe their product is the solution, but it’s not that simple — an enterprise needs to have the time and budget to implement a new solution to stop the nightmare. And most users in small businesses, nonprofits and developing nations have neither the staff nor budget for an enterprise-grade solution.

More than 15 billion image spams flood the Internet per day, a tenfold increase since 2005. The average image-spam message size is 50KB, which is 10 times larger than conventional spam. These larger message sizes, combined with the increased spam volume, have caused many fragile e-mail infrastructures to buckle under the load.

More of this spam is evading filters for two reasons. First, image-spam advertisements consist of an embedded file attachment such as a .gif or .jpg without any meaningful text in the message. Most other spam includes some meaningful text and a clickable URL that spam filters can detect. Eliminating many of the common techniques used to stop spam reduces catch rates and increases the amount of spam arriving in the in-box.

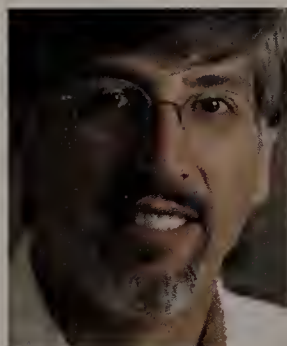
Second, recent technological advancements by spammers have increased image spam’s effectiveness. The primary innovation involves randomizing multiple copies of an image to appear the same to the human viewer but totally different to spam filters. For example, spammers are sending spam with an attached .gif file that has random visual “dots” inserted in the image. Image colors, the width and pattern of the border and font style also are used to randomize the image. In all of these cases, the image appears the same to the user, but its checksum is different. More spam evading filters results in more spam landing in in-boxes, reducing employee productivity and increasing IT staff workload.

Image spam also portends more dark days ahead for the Internet: Sophisticated criminals will continue to launch an endless stream of profitable, damaging attacks. The image-spam attacks urging recipients to buy penny stocks have made the spammer rich: Spammers buy the shares at a low price and “spamvertise” the stock; recipients buy the shares, driving up the stock price; then the spammers sell their original shares for a quick profit. These criminals are capable of building sophisticated image-randomizing and spam-sending systems, launching billions of spams and investing their own capital in the public, heavily regulated stock markets. Angry users and e-mail outages are mere collateral damage to them. When this scam stops working, they will move on to the next one. Those who ignore what image spam attacks bode for our future do so at their own peril.

Peterson is vice president of technology for IronPort. He can be reached at ppeterson@ironport.com.

No

by John Veizades,
Mirapoint



Spam is a continually evolving threat. Randomized image spam is just the latest mutation in a long line of techniques used by spammers to thwart the defenses put in place by the antispam community. What’s different about image spam is that most traditional antispam techniques have failed to offer an effective means to thwart it. Consequently, the volume of image spam has increased. Because image-spam messages tend to be larger than traditional spam, more network and disk utilization must be devoted to them. Understandably, this is an alarming turn of events, but there is no reason to be overly concerned by the image-spam threat if you have the correct reactive solution in place at the edge of your network.

To combat image spam successfully, a product requires three capabilities. First, it must block unwanted messages as soon as possible. The blocking system must use IP address-based reputation and SMTP behavior to decide whom to block and whom to let through. The reputation system must understand how a particular sending IP address behaves in a global context and adapt in real time to changes in sending behavior. Using these connection-management techniques, as much as 80% of inbound spam can be stopped before it places a load on your network and e-mail systems.

Second, the product must identify suspected messages as spam. Systems that rely on lexical analysis of messages fall short, because there is no consistent text in image-based spam. Systems that rely on matching similar messages throughout a collection system also fall short, because no two image-spam messages are identical. In addition, some antispam mechanisms use optical character recognition techniques to try to extract text from image-spam messages. Unfortunately, the overhead and accuracy required renders this solution ineffective for most companies. To be effective, an anti-spam solution must observe the behavior of message senders and the messages they send in a global context, identifying patterns of behaviors for these senders and separating legitimate senders and messages from spammers and spam.

Finally, the product needs controls that allow users to select what they believe to be legitimate messages and those that are spam. No solution, however sophisticated, can stop 100% of spam without eventually stopping a piece of legitimate mail. An edge e-mail hygiene solution should allow users to manage the messages that have been identified as potential spam.

Will image spam be around for the long term, and will the volume of these messages increase overtime? Of course — spammers have found an effective way to get their message in front of users, and the gains are substantial. Fortunately, there are solutions that can provide effective defenses against these emerging threats. The challenge is not for the e-mail administrators, but for the e-mail hygiene vendors; we must continue to innovate and perfect our products so that we are always one step ahead of the spammers.

Veizades is Mirapoint’s senior product line manager for RazorGate. He can be reached at jveizades+netw@mirapoint.com.

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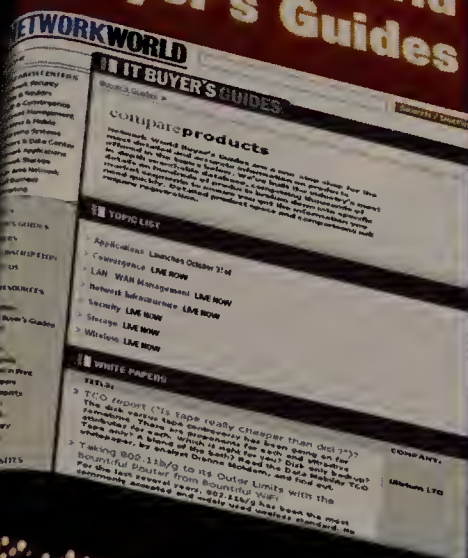
Get into the debate

Log on to *Network World* to voice your opinion. Face-off authors Patrick Peterson and John Veizades will add their thoughts to the discussion.

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VOIP. Do it for the apps, not the savings

Voice over IP can cut costs, but it's the innovative converged applications that have these customers raving about their productivity gains.

WHEN IT COMES TIME TO JUSTIFY A MOVE TO VOICE OVER IP (VOIP), cost savings no longer top the list. Instead, today's users say it's a new crop of VOIP-enabled applications that seal the deal.

In the past, companies considering VOIP would justify the move based on reductions in long-distance bills, saving on moves, adds and changes, and easier management from a single network infrastructure. Although those benefits are still important, today's users say a bigger factor is applications that promise unprecedented productivity gains.

"A lot of companies implement voice over IP to save on long-distance calling and things like that," says Fran Lorion, CIO for the Visiting Nurse Association (VNA) of Boston based in Charlestown, Mass. "That was never an issue for us."

Instead, the VNA's new Shoretel, Inc. VOIP system let the organization dump a costly Centrex contract, while at the same time implement a new application that increases productivity and allows staffers to provide better, more personalized patient care.

"Before the VOIP system was in place, it would literally take 5 or 10 minutes to handle a patient call," Lorion says. Receptionists needed to answer the call, enter the patient's name into the computer system, find a match in the patient database, and go back to the caller to verify the ID. Since many of the VNA's patients speak English as a second language, the process tended to become even more complicated.

The new VOIP system, however, links directly with the patient database. The system takes each call, links up the caller ID information with the corresponding entry in the patient database, and delivers a screen of patient information to the receptionist — even before the call rings.

That screen of information includes the nurses assigned to the patient, the specific nursing team and the manager of that team, as well as contact information for those staffers.

"Everything that patient may want to do — talk to a nurse, a manager or whatever — the information's all available right on this screen," Lorion explains. "So now, the receptionist can answer the phone call by saying, 'Hi Mary Jones, how are you doing today? What can we do for you?' And the time it takes to handle a call has gone from [as much as] 10 minutes to just 30 seconds on average."



That's a huge productivity boost for staffers who handle nearly 300 calls per day. "The receptionists love it," Lorion says. "They now have the ability to focus where they really want to focus, which is on patient care."



"The time it takes to handle a call has gone from [as much as] 10 minutes to just 30 seconds on average," says Frank Lorion of the Visiting Nurse Association (VNA) of Boston of his new VOIP solution. "[Receptionists] now have the ability to focus where they really want to focus, which is on patient care."

Era of unified communications

Experts say the VNA's experience is not unique. As more organizations move to VOIP, new productivity enhancing applications – especially those based on real-time and presence-based capabilities – are becoming increasingly important.

"We're moving to a new stage of unified communications that enable business processes to happen more quickly and effectively. It's about connecting people with people – no matter what device they use or where they're located – vs. just picking up a phone," says Elizabeth Herrell, vice president at Forrester Research, in Cambridge, Mass. These new applications include everything from VOIP-over-wireless solutions to global presence-based applications that ensure users reach the right per-

son at the right time via the right communications method. "The key is to reach people in real-time, and that's what VOIP enables."

According to Forrester, more organizations are beginning to see the VOIP light. In March 2006, Forrester surveyed 714 decision-makers at North American and European enterprises about their approach to IP telephony and found that 45% of enterprises surveyed had deployed or were currently deploying VOIP, while another 30% were evaluating or piloting the technology. In addition, more than half of enterprises surveyed said they planned to increase spending on VOIP in 2006.

These numbers, along with the fact that two out of every three phones shipped in North America in 2007 will be IP phones, shows that VOIP is no longer considered a new, untried technology and that organizations are ramping up implementations fairly quickly, Herrell says. "We have gone past the start-up phase to full user adoption, and we're beginning to see these new applications as a result."

Boosting productivity with presence

Perhaps the most important feature of VOIP in terms of productivity applications is its ability to detect presence. With many solutions, IP phone users can make known their availability and the best method to reach them at any given time. As calls come in, they are automatically routed via the best method – be that the recipient's office phone, home phone, PDA or cellphone.

"That's been a big benefit here at Pepsi," says Jim Bare, IT manager at Pepsi-Cola Bottling Co. in Hickory, N.C. With the help of Vernon Hills, Ill.-based systems integrator CDW, Inc., Pepsi implemented an Avaya VOIP network to link up its four

5 VOIP-enabled features that offer true business benefits

Collaborative communications applications offer benefits including faster time-to-market, improved customer response times, and individual employee productivity improvements. Here are five key features to look for, according to Forrester Research:

- **Improved user interface.** Point-and-click interfaces let users, from the desktop, initiate outbound telephone calls and set up conference calls, greatly improving productivity.
- **Presence.** Employees can see the status of a coworker, reducing the need to send redundant messages across several devices.
- **Group presence.** This feature facilitates meeting scheduling among team members and allows workers to schedule impromptu meetings as needed.
- **Unified messaging.** Employees get one source for their messages and do not need to retrieve the same message from voicemail, IM, cell phones and e-mail.
- **Advanced conferencing.** The ability to navigate easily from audio, Web, and video conferencing meetings during a single session promotes faster problem resolution and could reduce travel costs.

SOURCE: "How to justify IP communications costs," Feb. 28, 2006, Forrester Research, Cambridge, Mass.

Assess, monitor, manage, optimize: Fluke Networks does it all

As organizations deploy voice over IP (VOIP) on their data networks alongside other mission-critical applications, they quickly find that their data-centric management tools are not up to the task of assessing, monitoring, managing and optimizing VOIP performance from end to end.

Most IP management tools have a "silo" mentality in that they concentrate solely on either the voice side or the data side, or on only one area of a converged network – be it the infrastructure, the LAN or the WAN.

Fluke Networks is a different story. With its recent Visual Networks acquisition, Fluke Networks now offers a comprehensive set of tools aimed at ensuring success through every stage of the VOIP lifecycle.

A CLEAR ASSESSMENT

Many PBX vendors refuse to sell equipment to users that have not performed a proper network assessment to ensure that the infrastructure can support VOIP along with mission-critical data applications.

Fluke Networks offers end users a choice of tools for the job. Its VOIP Planner appliance generates synthetic VOIP calls to let end users – prior to deployment –

determine how the network will perform under VOIP loads. In addition, the company offers granular monitoring tools that ensure the network has adequate bandwidth in place to support anticipated VOIP usage.

MONITOR, MANAGE, OPTIMIZE

Once the VOIP network is up and running, Fluke Networks tools enable users to proactively monitor and track service quality to ensure that any problems are identified and repaired, even before end users notice a problem. The company's Visual UpTime Select monitors both the data and voice side of a converged network, enabling users to easily see – on one screen – not only how voice is impacting data quality, but how spikes in data application usage could lead to VOIP service degradation.

Additional Fluke Networks tools let users quickly pinpoint and remediate problems. The firm's NetTool Inline Tester uncovers physical layer issues, such as faulty VOIP phones or connections, its Link Analyzer and Protocol Expert tools handle LAN and VLAN troubleshooting, while Visual UpTime Select pinpoints WAN problems. The tools also provide a historical

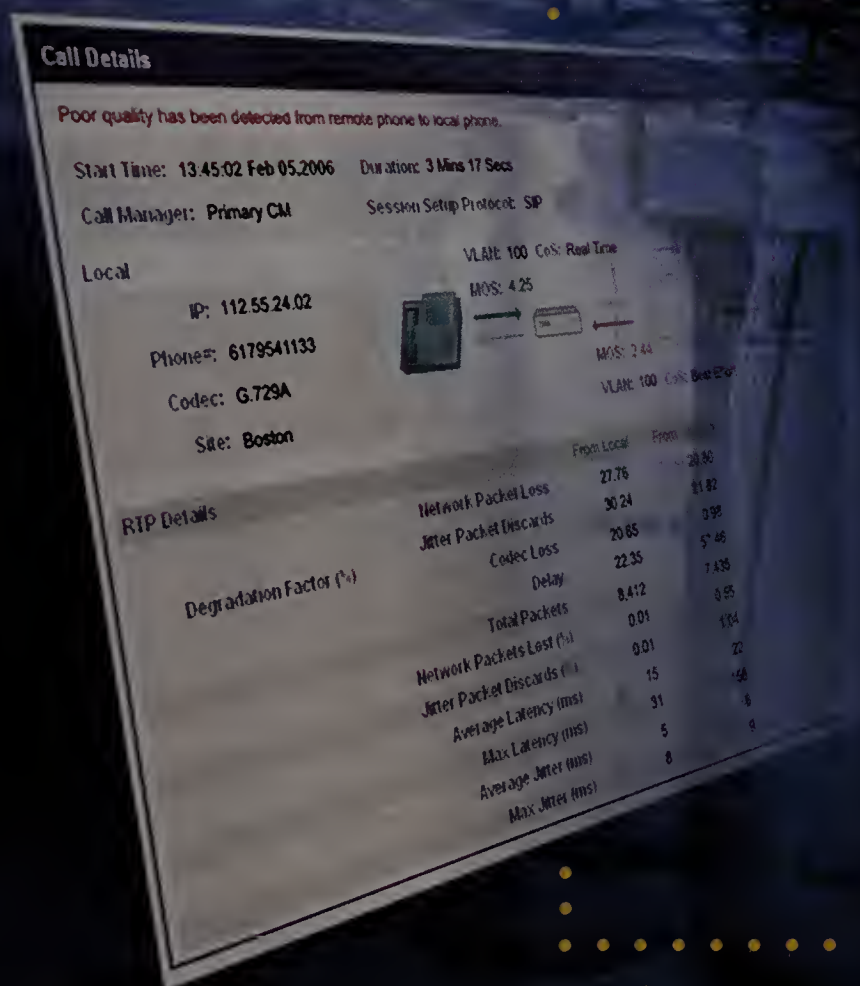
view, a key to solving intermittent network problems. With Visual UpTime Select, for example, users can drill down into the actual call detail, even if the call occurred weeks ago.

In short, Fluke Networks provides all the necessary solutions to successfully manage the complete lifecycle of a VOIP implementation, from the edge to the core. Rather than making the costly mistake of just throwing bandwidth at a problem, the Fluke Networks toolset enables end users to make informed decisions about how best to optimize their infrastructure to ensure top quality – for both voice and data.

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Having network, application, and VoIP-specific analytics allows you to clearly see how data traffic is affecting call quality, and how VoIP traffic is affecting data quality, a significant advantage over products that look only at voice. This is critical to enterprise performance management as voice and data converge, since each has the potential to impact the other across the LAN, WAN, and multi-tier network environments.

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sites throughout the state. As part of the rollout, Pepsi put in a state-of-the-art Multi-Protocol Label Switching (MPLS) network that ensures each call has optimum quality of service and reliability.

"With the Avaya system, each phone operator has what's like a command and control center," Bare says. "They can see if people are on the phone, and they can see the best way to reach someone." Pepsi strives to maintain a human touch, and understands how aggravating automated attendants can sometimes be. "We want our customers to talk to a human when they call during normal office hours, and that's what the VOIP system enables."

Office managers at the remote locations tell me they feel like they're closer to the corporate office now because they can just pick up the phone, dial a 4-digit extension and reach someone," says Jim Bare of Pepsi-Cola Bottling Co. "Everyone now feels like they're more a part of the team."



In addition to boosting sales by streamlining the handling of outside calls, Pepsi's new VOIP network also increases productivity for staffers internally. Prior to the move, each site needed to dial an intra-state long-distance call to reach the Hickory headquarters or another remote office. With VOIP and the MPLS network, staffers need only dial a 4-digit extension. All internal calls ride over the IP net-

Beware hidden VOIP costs

Organizations need to keep an eye on these often-overlooked expenses when cost-justifying a move to VOIP.

• **Hardware costs beyond the network upgrade.** Data network upgrades required for IP telephony are dependent on the choice of a vendor and its network requirements. Many include gear such as gatekeepers, to address translations across the LAN, and media gateways, to support IP station equipment and trunks. Additionally, routers and older switches often need replacement to support voice traffic. In many cases, the cost to upgrade the data network is twice the cost of the VOIP solution.

• **Professional services.** Implementation of IP communications includes initial system design to post-cutover support. Outside expertise is often needed and costs for these services may be one to two times the equipment replacement costs.

• **Monitoring tools.** Voice traffic requires quality-of-service (QoS) software to prioritize voice

traffic and prevent latency and disruption. Vendors also recommend VLANs to separate voice and data traffic. Good monitoring tools, as well as call monitoring and accounting software, may also be needed to provide information on the current network operations.

• **Cabling upgrades.** In older facilities, where existing cabling is not CAT 5 or higher, new cable runs are necessary to support converged voice and data. In older facilities, cable replacement is often a major undertaking.

• **Additional power sources.** IP requires additional sources of power to support desktop and LAN equipment, perhaps including in-line power or external adapters. Additionally, customers can incur new expenses from ventilation, air conditioning (HVAC), insurance and floor space.

SOURCE: "How to justify IP communications costs," Feb. 28, 2006, Forrester Research, Cambridge, Mass.

work, saving not only time, but the cost of those intra-state calls.

"In North Carolina, intra-state long-distance calls are pretty expensive," says Rich Korn, senior voice and data group specialist at CDW. "Now Pepsi can make all of those calls at no charge. It's a big change."

But cost savings isn't the primary benefit, Bare says. "Office managers at remote locations tell me they feel like they're closer to the corporate office

now because they can just pick up the phone, dial a 4-digit extension and reach someone," Bare says. "I didn't expect that out of this, but everyone now feels like they're more a part of the team. That's a good thing for the company overall."

Other organizations making strong use of VOIP's presence-based features are finding those benefits even more critical when used in a global scenario. America-Mideast Educational and Training Services Inc. (AMIDEAST) is a private, nonprofit organization

Siemens HiPath 8000: The future of IP convergence today

Most voice-over-IP (VOIP) solutions today fail to deliver on the original promise of convergence. Rather than fostering open communications across a variety of IP networks, users end up with proprietary systems that tie them to a single vendor's product suite.

The Siemens HiPath 8000, however, is a truly open IP communications system. A server-based softswitch with native Session Initiation Protocol (SIP) support, the HiPath 8000 can run on any hardware, with any gateway or network device, and on any IP network. A software-only solution, it enables end user customers and service providers to deploy and manage communications from a single data center for up to 100,000 users per system. Additionally, a version for small and midsize businesses is due out in mid-2007, designed to support as few as 300 users.

The HiPath 8000 is designed to run on highly reliable, fault-tolerant industry-standard servers and includes hardware error management features

that enable it to far exceed the reliability delivered by today's enterprise IP PBX solutions.

"The HiPath 8000 really delivers on the promise of convergence," says Mark Straton, senior vice president of global product marketing at Siemens Enterprise Communications. "Its native SIP support ensures that it can handle an enterprise's communications needs today while positioning them solidly for the future."

Today, for example, customers can use Siemens OpenScape, an open, presence-aware, real-time communications software suite, to quickly connect people and information from any location. As carriers and others roll out more native SIP support, presence-aware application options will multiply for HiPath 8000 users.

AN ELEGANT MIGRATION PATH

The HiPath 8000 also ends the rip and replace mentality that is the hallmark of traditional telephony upgrades. It allows organizations to move to the new communications paradigm one software

license at a time, gradually bringing new users and locations on board while their traditional systems remain in use.

And because of its revolutionary architecture, the HiPath 8000 offers enterprises a far more attractive total cost of ownership scenario. A study conducted by an independent solution provider with extensive experience in selling and installing VOIP systems manufactured by today's industry leaders found that of all the alternatives studied - traditional PBX, IP PBX, managed IP PBX and the HiPath 8000 - the Siemens HiPath 8000 garnered the best overall TCO and lowest operational costs of any alternative, with most users realizing 15% to 25% savings.

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that works to establish mutual understanding and cooperation between U.S. residents and those of the Middle East and North Africa.

Because AMIDEAST's sites are located throughout the world, in different time zones, and in many cases, open for business on different working days, staffers were finding it difficult to reach each other, schedule conference calls and perform other tasks that required input from its global work force.

Plus, the high cost of international calling was a burden to the organization. "Most of the time, people avoided making international calls entirely because of the cost," which ranged anywhere from \$4 to \$9 a minute, says Ugur Usumi, director of IT at AMIDEAST. "When people did try to call each other, because of the time zone differences they often wasted time and money in failed attempts to contact team members overseas."

The organization implemented a VOIP system based on the Siemens HiPath 8000, a server-based IP communications solution, along with Siemens' OpenScape real-time communications and collaboration software suite, and saw immediate results.

Since OpenScape is integrated with Microsoft Live Communications Server, it extends presence-based communications to video, instant messaging and e-mail, as well as voice. With the new system in place, employees no longer waste time and money playing long-distance phone tag, Usumi says, which has reduced the monthly long-distance bills by about \$1,000.

"It's easier to get hold of each other because of features like preferred device," Usumi says. "No matter where someone is, if you're trying to reach him you just click on the person's name and it will find him on the preferred device." That means users are more easily accessible, even when traveling,

and employees no longer have to keep track of multiple phone numbers for the same individual.

Emergency presence

While productivity increases and improved staffer communications are great benefits, for some organizations presence capabilities are even more important — literally a matter of life and death.

St. Petersburg College in St. Petersburg, Fla., implemented a VOIP network from NEC Unified, Inc. throughout its campus on the West Coast of Florida. The college originally based the network on hybrid IP/TDM PBXs placed throughout campus, but is now planning a move to NEC's second-generation VOIP, consisting of the NEC Univerge7000 server-centric IP communications platform integrated with Cisco's Call Manager unified management solution. As part of the move, the college integrated its campus-based E911 system with the VOIP network.

"We have a multi-campus college, and each campus has multiple buildings," explains Conferlete Carney, vice president of information systems, business services, budgets and planning at the school. "If you have an emergency in one building and you dial 911, the city's 911 center can't pinpoint your exact location. They just know it's at the college."

With the VOIP system integration, however, if a student or faculty member dials 911, not only is the exact building and even classroom location information passed along with the call, but campus security is immediately conferenced into the same call as it goes out to the city's 911 staff.

"So if 911 dispatches either fire, police or whatever emergency services are required by the situation, they will know exactly where to go on a campus, and our campus security can be ready to assist," he says. "In an emergency situation, those saved seconds become very important."

Carney is also impressed with the disaster recovery capabilities inherent in a strong VOIP infrastructure. The school has set up a disaster recovery site at a sister school about two hours' drive away from St. Petersburg. As part of the VOIP rollout, Carney linked the sister school directly to the St.

Petersburg network via a private T-1. Now, when staffers need to relocate to the disaster recovery site, establishing communications is as simple as carrying a phone to the site and plugging it in.

"So 36 hours before a storm hits our area, we activate our disaster recovery plan," Carney says. The technical team packs up their phones and drives to the disaster recovery site. Once they arrive, they simply plug in the phones and have all the same features and functions as if they were in the home office.

Carney says that application alone was worth the move to VOIP for him and his team. "After five years of working on and considering VOIP, that was the application that just jumped out at me," he says. "I pick up the phone, dial a 3-digit number and I get my tech person who's two hours away at a different college campus. No administrative system updates are required — the system does it all behind the scenes. And the voice quality is crystal clear. It's pretty amazing."

The wireless factor

Beyond presence, another application touted by today's VOIP users is the ability to bring wireless devices into the IP communications scenario, at times even enabling critical voice services to ride over a wireless IP network.

One such user is the University of New Mexico in Albuquerque, N.M. The university, which includes a medical school and hospital, decided to replace its aging NEC TDM-based phone system with a new

NEC Unified: Giving SMBs the VOIP edge

Small and midsize businesses (SMB) stand to reap meaningful gains from moving to voice over IP (VOIP). From the reduced costs inherent in using a single network for both voice and data, to the ability to cost-effectively support business-critical applications, such as state-of-the-art call center and communications applications, VOIP offers SMBs large company benefits at affordable prices.

Making the transition to VOIP can be a complex endeavor, however, and small business owners rarely have the time to become convergence experts. That is where NEC Unified can help.

NEC Unified has extensive experience in designing, installing and implementing enterprise communications systems around the world, and it can proactively support small businesses as they determine the best use of VOIP in their organizations. For those not ready to take the plunge into a pure-IP environment, NEC's VOIP products make possible hybrid solutions with 100% investment protection.

NEC provides a full range of products and services to ensure IP success. These include:

- **IP telephony solutions.** NEC's Univerge SV7000 Multiple-Purpose System (MPS) is a pure-IP PBX designed specifically for companies with 50 to 500 VOIP users. In addition to delivering standard telephony features, the Univerge SV7000 MPS provides the ability to support converged architecture applications, such as unified communications, presence, collaboration and soft phones.

- **Professional services.** NEC helps mitigate the operational issues surrounding VOIP by offering not only onsite maintenance, but network design and implementation, proactive performance management and fault resolution, multi-application support and a 24x7 help desk — all through a single point of contact.

- **IP assessments.** To help SMBs get the optimal value from a VOIP deployment, NEC Unified offers several pre-deployment assessment services, from a simple, inexpensive pass/fail assessment called IP Redicheck to a full-blown IP telephony assessment that identifies specific problems and makes recommendations for resolution.

- **Managed services.** NEC Unified also offers

NEC Secure, a complete managed services suite for both the enterprise and SMB markets. The NEC Secure family includes solutions for e-mail protection, on-site engineering assistance, as well as 24x7 remote monitoring and threat assessment.

"The versatility of NEC Unified Solutions' products and services enable SMBs to incorporate advanced communications solutions to drive productivity and collaboration, while lowering costs," says Paul Lopez, general manager of marketing for NEC Unified Solutions. "This versatility, coupled with NEC Unified's strategy to offer SMB customers the freedom to adopt VOIP, whenever and where ever they need it, ensures that SMBs can proactively meet their ever-changing communications demands."

Learn more about NEC's VOIP solutions.
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NEC hybrid PBX that enables it to provide VOIP communications where necessary, while leaving some areas of the school served by traditional TDM voice service.

"We decided to go with the hybrid model because we could move toward IP as we saw applications for it that were enough of a cost or productivity benefit or served some other special need," says Paula Loendorf, director of information technology services at the university. "It allows us to move gradually."

One of the applications that immediately came to mind, however, was wireless VOIP communications for the staffers within the university's hospital. Currently, doctors and nurses in the hospital's emergency room and operating rooms use wireless analog phones to communicate. The school is building a new hospital wing, however, which will have wireless LAN with VOIP capabilities.

Loendorf says that in January, the hospital will pilot new NEC/Spectralink Corp. phones in the medical intensive care unit (ICU). The key selling factor is the VOIP phone's ability to support text messaging and push-to-talk walkie-talkie capabilities, features that are attractive to the hospital's nursing staff.

Because the phones are IP-based, they will integrate well with the current nurse call system, Loendorf explains. "If patients need to reach a nurse, they press a button at their bedside, and the nurse will get a text message saying, 'Bed Call to Room X.' The nurse can then respond by pressing a button and speaking directly with the patient."

Loendorf says the system will save the nurses pre-

cious time in sensitive care situations. "The caregivers will be aware of what the patients need but they don't have to be tied to the nursing station," she says. "Nurses put in a lot of miles every day. This is one way to save them steps while offering better patient care."

The university's hospital is also considering implementing wireless badges provided by NEC and Vocera Communications. By simply patting the badge, users can have immediate push-to-talk walkie-talkie capabilities, similar to



Nurses put in a lot of miles every day. [VOIP applications offer] one way to save them steps while offering better patient care, says Paula Loendorf of the University of New Mexico, which is using VOIP in its medical school's hospital.

the Spectralink phones. The difference is that it's completely hands-free. "There are a lot of hospitals around the country that have implemented those because of the form factor and because it's hands-free, which is a huge thing in the medical environment," Loendorf says. Although the school is not yet piloting the badges, she foresees using both the Spectralink and Vocera wireless VOIP applications eventually.

"We might end up using the Spectralink NEC wireless phones in some areas, and we may want to implement the Vocera badges in others, depend-

ing on the needs of the various groups in the hospital," she says.

It's not just unified messaging anymore

Today's VOIP users, although originally attracted to the technology for its promised cost savings in terms of office-to-office calls, simpler management and reduced administrative tasks for moves, adds and changes, say that today they find the depth and breadth of VOIP-enabled applications the true deciding factor in choosing the technology.

"The industry is changing and even the words 'VOIP' and 'IP telephony' are morphing into the bigger term of 'IP communications,'" Forrester's Herrell says. "Because it's bigger than just replacing a phone system — it's building a new real-time, unified, collaborative communications environment that truly supports business processes."

And as more VOIP systems begin to embrace open standards, such as the Session Initiation Protocol (SIP), the business-changing applications of IP communications are bound to multiply. SIP is a signaling protocol for IP-based conferencing, telephony, presence, events notification and instant messaging. As more carriers, equipment and software supports SIP, it becomes easier to create true multi-vendor, real-time collaborative applications that can be used on the fly, furthering the reach and usage of IP telephony and communications.

"There is just a lot of pressure today to look at how you can save money and yet do the right thing for your organization," says University of New Mexico's Loendorf. "With IP networking, we get the best of both worlds. And as new applications become available, it's bound to get better." ■

Inter-Tel's IP communications strategy for maximum ROI

Businesses today demand an ever-expanding list of requirements to meet their communications needs. Improving productivity, enhancing sales, supporting resource sharing, integrating technologies and managing complex security issues are some of the benchmarks of successful deployments that seamlessly merge multiple operating environments.

Inter-Tel uniquely provides a single point of accountability to satisfy these needs through its family of Inter-Tel® 5000 and Inter-Tel® 7000 converged communications systems, as well as its Inter-Tel NetSolutions® network services offerings. Providing feature-rich applications to maximize productivity and improve business processes, Inter-Tel enables industry-leading presence, messaging and collaboration tools.

Serving businesses with up to 2,500 users, the recently released Inter-Tel 7000 is an open-standards Session Initiation Protocol (SIP) softswitch that provides full PBX-style functionality and enables customers to integrate standard SIP devices and applications into their networks. The Inter-Tel 7000 offers midsize to large businesses and enterprises robust,

integrated IP telephony applications that include Inter-Tel's presence management and advanced call routing capabilities; powerful mobility solutions; collaboration, Web and audioconferencing applications; and user-friendly system administrative and diagnostic tools.

"This open-standards platform offers choices that are not typically available through proprietary technology and has a feature set that we feel surpasses other IP offerings in the market today," explains Jeff Ford, Inter-Tel's chief technology officer. "Moreover, it is designed to enable businesses to take advantage of new communications technology as it becomes available. That means customers can expect further improvements in productivity and efficiency, along with a substantially longer technology lifecycle, to help protect their investment."

In addition, as a provider of tier one, carrier-neutral, network services offerings, Inter-Tel NetSolutions offers a bundled approach to enabling IP-centric communications. By combining Multi-Protocol Label Switching (MPLS), IP and legacy PSTN solutions, NetSolutions facilitates the attainment of scalable, manageable and reliable communications environ-

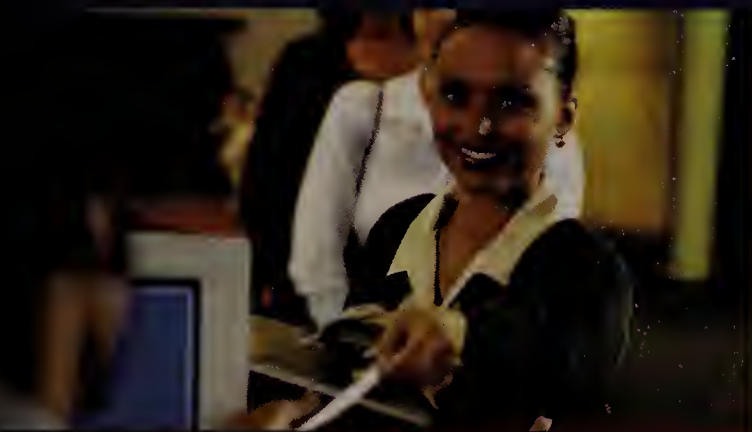
ments, while maintaining affordability. In addition, NetSolutions offers a robust suite of real-time management and monitoring tools designed to proactively support quality of service, network reliability and disaster recovery, while meeting industry-leading service level agreements.

Inter-Tel offers the means to leverage advanced system technologies and reliable network performance, all from a single source. With over 35 years of focused commitment in business communications, Inter-Tel is the smart choice for developing an IP communications strategy that delivers maximum return on investment.

Learn more about the Inter-Tel 7000 communications system and the Inter-Tel NetSolutions portfolio of voice and data services. Visit www.inter-tel.com

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Brenda O'Connell

VP Operations

Empire Affiliates

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From a network standpoint, the biggest challenge we have is the rate of growth. We often have to create services or infrastructure in a very short period of time.

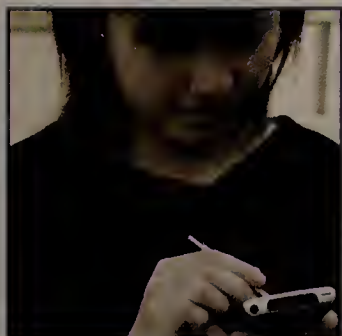
Inter-Tel has the ability to move as quickly as True.com does. It's enabled my group to focus more on our core business and let some of the supporting infrastructure be offloaded. Inter-Tel is really an extension of our IT services."

Greg Baumann

Technology Operations Manager,

True.com

► **To learn more about Inter-Tel's value-driven communications systems and solutions, visit www.inter-tel.com**



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In Their WORDS

Vendor Solutions for Your IT Challenges

COMPANY: The Siemon Company™

OVERVIEW: Established in 1903, Siemon specializes in the manufacture and innovation of high-performance network cabling solutions. One of only three network cabling companies with true global capabilities, Siemon offers the most comprehensive suite of copper (and fiber cabling systems available. With over 400 active patents specific to structured cabling, from patch cords to patch panels, Siemon Labs™ invests heavily in R&D and industry standards, underlining the company's long-term commitment to its customers and the industry.

CHALLENGE: The recent ratification of the 10GBASE-T standards for 10Gb/s transmissions over copper cabling has highlighted the limitations of UTP cabling. The inclusion of strict alien crosstalk parameters in the 10Gb/s standards posed major issues for UTP systems. Although Siemon and other major cabling manufacturers were able to meet the 10GBASE-T performance requirements in a UTP configuration, the resulting designs relied on increased cable diameters and restrictive installation practices.

SOLUTION: These UTP limitations raised the profile of screened 10Gb/s solutions, including Siemon's 10G 6A™ F/UTP. By virtue of their screen, these solutions defeat alien crosstalk without major design or installation changes. This fact, coupled with recent innovations designed to significantly simplify the installation of screened cabling, has caused many users to consider 10Gb/s screened cabling.

As an indication of screened cabling's growing profile, Siemon has noticed a strong upward trend in the adoption of 10 Gb/s screened (F/UTP) copper cabling systems, particularly in markets where UTP has traditionally been the most popular option. In fact, growth of 10Gb/s F/UTP has outpaced UTP solutions. The rising end user acceptance of screened solutions is further evidenced by recent cabling industry response. Manufacturers known primarily as UTP-focused have begun to enter the screened market with their own versions.

More information on the growth of screened cabling as well as Siemon's 10G 6A F/UTP line is available online at www.siemon.com.



800-945-4200
www.siemon.com

COMPANY: Netcordia

OVERVIEW: Founded in 2000, Netcordia develops NetMRI, an automated Best Practices based network management appliance. NetMRI is the most comprehensive, fully integrated network diagnostic tool for enterprise and government networks. This plug and play unit allows a network engineer to easily and quickly identify issues with respect to VoIP, configuration compliance, VLAN, and IP within the network.

CHALLENGE: As technology is becoming an integral part of everyday business, enterprises are placing more rigorous demands on their networks, expecting high reliability, rapid response time, consistency and compliance. These demands have network engineers searching for a way to proactively and cost-effectively manage the network infrastructure without utilizing too much staff time and energy.

SOLUTION: Netcordia provides the solution with NetMRI, an award-winning network analysis appliance that goes beyond reporting to provide analysis based upon expert rules and best practices. With NetMRI, network managers can optimize their networks, pinpointing and solving present and potential hot spots. What may have previously taken numerous IT professionals hundreds of hours to uncover, a single NetMRI unit now easily finds in minutes.

Monitoring and network management tools typically capture statistics from interfaces, links and protocols, draw maps and graphs and send real time alerts about fault conditions. NetMRI correlates the statistics and applies rules of logic for troubleshooting in a useful browser-based view or report. NetMRI takes the next step with its configuration capabilities that allow customers to automatically fix problems, and create their own custom best practices. NetMRI establishes accuracy, integrity and reliability in significantly less time than legacy offerings.

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E-MAIL NEWSLETTER SHOWCASE:

Wireless in the enterprise

Mobile security lags compliance

BY JOANIE WEXLER

There is a frightening lag between organizations' zeal to use mobile devices and their ability to deploy them in a way that complies with regulatory security mandates. And it looks like business managers are pointing the finger at IT, while IT is pointing it right back at them in terms of who's holding things up.

These revelations were from "Comply on the Fly," a report just published by the Business Performance Management Forum, an organization whose members work to improve business financial and operational performance.

The forum's members comprise cross-departmental business and IT executives in multiple industries worldwide.

When IT personnel were asked what they need to get senior management to step up to the mobile compliance challenge, 38% of respondents said, "A security breach," said Adriano Gonzales, vice president of strategy and programming for the forum. "I thought that was alarming."

He added that 40% of the respondents to a 700-organization survey, which formed the report's basis, admitted not having necessary policies in place to govern sensitive data residing in mobile devices. However, half the organizations said that, at a minimum, 25% of their organizations' mobile devices currently in use do carry mission-critical and potentially sensitive information.

Why the mismatch?

The majority of business managers basically say it's up to IT to "make it happen," while IT executives counter that they are having a tough time getting management's blessing to address mobile security as a priority — and the resources needed to do it. One reason is that other compliance projects are taking precedence, Gonzales observed.

He offers a high-level methodology to fix this problem, stressing that enterprises need to band together, cross-departmentally, in a multidisciplinary approach to make sure all the compliance i's are dotted and t's are crossed. He suggests beginning with the following basics:

- Assess the use of mobile devices in your organization — who's using them and how?
- Perform a thorough risk assessment around these devices, then prioritize actions based on the risk and potential impact associated with each.
- Implement a corporate-wide governance framework tightly integrated into your overall network management systems fabric.
- Examine the details about devices and hard drives that need to be encrypted, encrypted access, and so forth, such that they match up with the auditing, archiving, and security mandates that apply to your company.

The report was built on a worldwide study conducted by the forum and its advisory board, who surveyed executives across multiple industries with director-level titles and higher.

Wexler is an independent networking technology writer/editor. She can be reached at joanie@jwexler.com.

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On Technology
John Dix

Managing the virtual world

CA last week became the latest management vendor to roll out tools to manage virtual server environments, joining BMC Software, IBM/Tivoli, Opsware and others rushing to fill this important need.

While virtualization has proved to be a boon — making it easier to consolidate and mix and match resources, among other things — the need for an integrated control plane for the physical and virtual worlds has become evident only as virtual machines have found increasingly important roles in production environments.

Because virtual servers can be created and changed so easily, a typical byproduct of virtual server adoption is an explosion in the number of servers used. That's a development that can negate some of the gains achieved by moving to the virtual realm.

Opsware CTO Tim Howes calls this phenomenon virtual machine sprawl. "Users end up creating hundreds of unsecured, unlicensed, unmonitored virtual machines," he says.

And it will get worse. Only a fraction of servers are virtual today, according to IDC, but more than half of all servers will be virtual by 2011, and that number jumps to 70% by 2013.

But Howes argues that lack of virtual machine management tools is hampering adoption of the technology, citing EMA research that shows 76% of virtualization deployments are on 500 or fewer servers. Where virtualization is used, 76% of the time it is used for test and development, 52% for file and print, 50% for Web servers and 44% for custom applications, according to Forrester Research.

Virtualization isn't used more widely, Howes says, because of the inherent management issues. "You have all the same issues with physical servers — configuration, patching — plus a slate of new management issues for the virtual realm: creating virtual machines, deleting them, moving, them and so on."

Howes says management of virtual environments is complicated by several issues: the hypervisor layer that makes virtualization possible represents a new software layer that needs to be mastered; virtual environments bring with them a host of new interdependencies and complex relationships; and the environments evolve more quickly because it is easier to change stuff on the fly (VMware's VMotion tool, for example, lets users move live virtual machines among physical servers).

Today many IT shops are using a mix of off-the-shelf products and homegrown tools to manage virtual environments, but achieving scale will require management wares such as those from Opsware, CA and the others. Next year will see these technologies blossom, and not a minute too soon.

— John Dix
Editor in chief
jdix@nww.com

Opinions

Title match

"Mismatched job titles" (www.networkworld.com/6326) hit home with me on a number of levels. However, David Foote's comments about network engineers/administrators/architects/technicians surprised me. Maybe it's just the market I'm in, but in general I see a wide variety in what people mean when they use the term "network." For some people, it's strictly routers/firewalls/switches; for other people, it's systems (servers, hardware); for others, it's applications (messaging, Citrix). I also haven't seen consistency in the second half of the job title — I've been an engineer (which in Canada is a protected term), analyst, specialist and I'm starting a new job soon where I haven't even bothered to learn my title. I do hope the trends of skill-based compensation make their way north, though.

Sean Walberg
Winnipeg, Canada

Checking up

Regarding Richard Stiennon's open letter to Check Point CEO Gil Shwed (www.networkworld.com/6328): With all due respect to Stiennon, the problem in security is not in the network — it's the integrity of the endpoints. If the integrity of endpoints is questionable, enforcement within the network is useless.

Check Point should be investing more in beefing up its endpoint integrity solution (perhaps as an add-on to its ZoneAlarm firewall) and not just buying up hardware-based platforms, such as Crossbeam.

Sanjay Sawhney
Cupertino, Calif.

I think Richard Stiennon's open letter to Gil Shwed is right on the money. However, it would

not be a stretch to use both the health check and user identity coupled with other attributes, such as location and security alert levels, to make the decision on whether a particular access is allowed.

The one place where I differ is the use of virtual LANs for customization of what the user gets to access. Why use a coarse-grained Layer 2 construct when you have much finer-grained mechanisms available that do not need network reconfiguration? The enforcement point needs to be able to enforce logical collection of resources without resorting to VLANs.

Sanjay Uppal
San Jose, Calif.

A virtual life

Regarding Mark Gibbs' BackSpin column "Big Brother gets virtual" (www.networkworld.com/6327): The IRS will have arrived when it can put a lien on your virtual house in your favorite Massively Multiplayer Online Role-Playing Game and take real tax payments in virtual gold, copper and silver. Do you have to file capital loss when your virtual house is taken over by a group of online thugs? Does the FBI get involved when crimes against your virtual character happen over state lines?

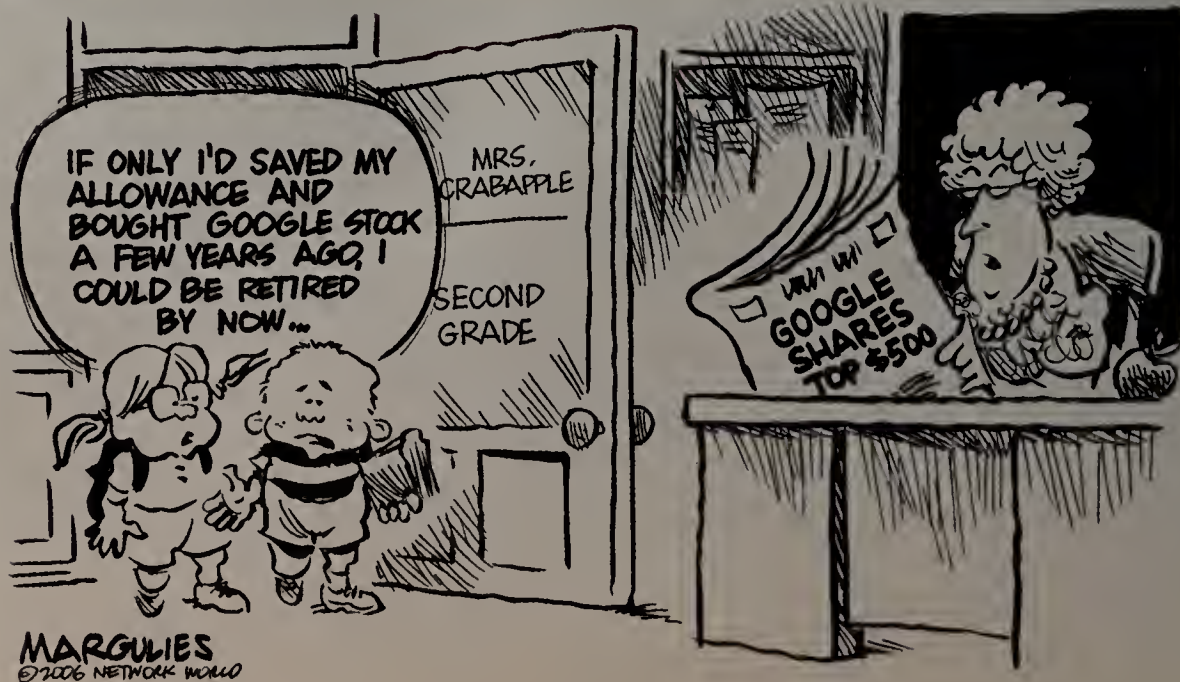
The states could follow suit by charging sales tax when you sell that third-level magical sword. Wonder if the lawyers will get into this? Consider the lawsuits when lawyers find out their client's virtual character was killed and all possessions taken. Would there be tax credits for virtual children?

Daren Mehl
Apple Valley, Minn.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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STRATEGY SESSION

Jeff Kaplan

On-demand services set to take off in 2007

Not long ago, every major research firm and business consultant was telling corporate executives that IT was a strategic asset that needed to be nurtured and leveraged as a competitive advantage. Today's reality is that IT is increasingly becoming a commodity, which many organizations are still unable to use fully. As a result, in 2007 more companies will turn to on-demand alternatives, which will disrupt the IT industry fundamentally.

Nicholas Carr took a beating a few years ago when he suggested that IT didn't really matter. In his follow-up story, "The End of Corporate Computing," in the spring 2005 MIT Sloan Management Review, Carr wrote, "Imagine what future generations will see when they look back at the current time . . . won't the way corporate computing is practiced today appear fundamentally illogical — and inherently doomed?" While some IT professionals may believe they succeeded in pushing Carr's views aside, because he is not as visible today, his Web site shows he is still busy speaking to executive groups, as well as at industry events, worldwide.

The reason: Corporate executives and users are fed up with the shortcomings of traditional IT and legacy applications, and increasingly are willing

to test a widening array of online alternatives. Many are being emboldened by the rapid growth of on-demand services in the consumer world. Just as the traditional institutions of newspapers, television and the music industry are under attack from Google, YouTube and iTunes, so are traditional ways of managing technology and deploying software being seriously challenged by a new generation of managed service and soft-

Users are fed up with the shortcomings of traditional IT and legacy applications.

ware-as-a-service providers.

Both managed services and software-as-a-service leverage pervasive broadband deployment and other enabling technologies to deliver easier-to-use IT management and business applications on a subscription-service basis. These services eliminate the upfront capital investments, hardware and software deployment challenges, and ongoing administrative hassles of traditional infrastructure and application management.

Adoption of these alternatives by organizations of all sizes is well under way. A recent Think-

Strategies survey of 550 IT professionals and business executives found that about 40% use one or more managed services, and nearly 95% are either very or somewhat satisfied with the quality of these services.

Beyond saving time and money, today's managed services and software-as-a-service solutions also provide greater backup-and-recovery capabilities than many corporate IT shops. They also provide real-time, multiuser visibility that permits greater collaboration among workers.

Look for corporate adoption of on-demand services to accelerate in 2007, as more customer success stories about the lower total cost of ownership and greater return on investment become available. Corporate executives no longer will be asking why they should consider managed services or software-as-a-service, but why they should continue to put up with the hassles and costs of traditional IT and legacy applications. The real question will be whether their IT staff will be ready to respond to the on-demand movement heading their way.

Kaplan is managing director of ThinkStrategies, a consultancy in Wellesley, Mass. He can be reached at jkaplan@thinkstrategies.com.



REALITY CHECK

Thomas Nolle

Can T-Mobile launch an FMC arms race?

Fixed-mobile convergence has always been seen in the United States as one of the pawns in the game of RBOCs vs. cable companies. The former were supposed to be looking at FMC to link profitable mobile voice with less-than-profitable wireline voice, the latter as a way of eliminating FMC as an RBOC differentiator and possibly easing their own installation problems. Now T-Mobile, a player in neither camp, is taking an early FMC position that may cause both RBOCs and cable companies to jumpstart their own efforts.

T-Mobile's offering, HotSpot@Home, is based on a new series of handsets that roam between Wi-Fi and cellular services. This means a user can use Wi-Fi voice while using a home network or a T-Mobile hot spot. The service is available only in certain areas, but the company expects to roll it out nationally in 2007.

For consumers, a handset that can roam between Wi-Fi hot spots (including a home network) and the cellular network represents a potential savings in airtime charges on their cell phones. You can walk into your home (or another qualifying hot spot) and a call in progress will roam over onto your home network, saving you minutes. You also get reliable reception in areas where T-Mobile has hot spots, such as airport lounges. In theory, it will let you give up your landline for a purely untethered life.

Which, of course, may be why you're getting this from T-Mobile and not AT&T or Verizon. The RBOCs' quarterly numbers have shown declines

in their access lines, so you would hardly expect RBOCs to jump out in front of the dual-mode handset trend. The cable companies, on the other hand, have every reason to want to support the kind of FMC T-Mobile offers.

This kind of FMC is a boon to the cable companies, because it could eliminate the problem of voice installation. Give customers a couple of Wi-Fi/cellular handsets, and they don't need to rewire their internal phone connections to use a cable voice service with multiple home phones. The

T-Mobile has changed the game, and the changes may show up even in 2007.

problem is that the cable companies don't have cellular service; most have a relationship with Sprint for "quad-play" capability. With the RBOCs on the sidelines, it appears the cable guys are content to sit and not empower Sprint with new industry power and revenue.

T-Mobile changes all that, threatening both parties with loss of voice customers. If T-Mobile can get the handset and operations software tweaked correctly in these early trials, it could roll out the service nationwide and cause some serious competitive headaches for RBOC and cable company alike. That would shake up the voice market big time.

There are issues, and security is a big one. T-

Mobile has some control over which Wi-Fi networks carry customer calls, but attempting to make the concept more widely available and useful could introduce security holes. Imagine a rogue Wi-Fi setup that's designed to snare your phone and record calls, steal the numbers you call and steal transactions you make.

A second issue is regulatory, including emergency calling. Wi-Fi setups right now would not necessarily record E911 data or may not comply with the Communications Assistance for Law Enforcement Act or other lawful intercept requirements.

It's clear T-Mobile hopes to work through these issues in early deployments, and the stakes are high. If T-Mobile can get a lead here, it could become one of the top players, easing out troubled Sprint. This kind of FMC is probably the killer application for new-generation voice, the force that will create the kind of revolution in the voice arena that has been predicted for a decade and has yet to arrive. It may be the force that creates universal broadband access that empowers municipal Wi-Fi networks, drives WiMAX deployment and even promotes content. T-Mobile has changed the game, and the changes may show up even in 2007.

Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (856) 753-0004 or tnolle@cimicorp.com.

CLEAR CHOICE TEST

Network access control

ConSentry edges out Nevis in in-line NAC appliance test

Pair offers increased access control with minimal impact on existing networks.

BY JOEL SNYDER, NETWORK WORLD LAB ALLIANCE

Start-ups ConSentry Networks and Nevis Networks have stepped into the network access control ring with in-line enforcement products that promise high levels of security with minimal impact on existing network infrastructures.

In this Clear Choice Test we found that ConSentry's LANShield CS2400 Controller coupled with its InSight Command Center management system comes closer to that mark with an enterprise-ready package that has only a few rough edges. Nevis' LANenforcer 2024 appliance coupled with its LANSight Security Manager trails in comparison because of overall design issues and more than its fair share of bugs.

At the core of LANShield and LANenforcer are very high-speed, high port-density, stateful firewall devices and intrusion-prevention systems (IPS). Both claim a maximum of 10Gbps throughput and a capacity of 1,000 users. They have many potential uses, such as traditional firewalls in a data center or as rate-limiting IPSs, but the buzz around NAC in the last 12 months has been deafening, and both products are being positioned — at least this week — as NAC solutions.

The use case goes like this: Enterprises want to implement NAC but they want to minimize changes and upgrades to their installed LAN switching infrastructure. The LANShield and LANenforcer boxes we tested have 10 and 12 pairs, respectively, of Gigabit Ethernet ports. Install either device next to your core switch. For each uplink from a wiring closet, use a port pair to run the traffic through the device before passing it to the core switch. This gives you a control point — both companies call their devices controllers rather than security switches — to authenticate users, apply highly detailed per-user stateful firewall controls, and use as an internal IPS.

We looked at these products as NAC devices and focused on four areas critical for any NAC deployment: authentication and authorization, endpoint security posture assessment, traffic enforcement, and system management (see "How we did it" at www.docfinder.com/6330). We are assessing the performance of these products in a separate test and will post those results when they are available.

Authentication and authorization

Authentication is a difficult piece of the NAC picture for LANShield and LANenforcer to master. Because they sit deeper in the network, there is no simple answer to how users will authenticate to the devices. The most obvious approach is to use a Web-based captive portal, and both



ConSentry's LANShield controller is a high-speed, high-density in-line firewall coupled with a flexible set of authentication options that give companies versatile enforcement controls.

products support this as an authentication method. With a captive portal, the user connects to the network, gets an IP address, then launches a Web browser and tries to open a Web page. LANShield and LANenforcer intercept this communication and redirect a user's browser to a page that lets him authenticate.

We found a major design flaw in LANenforcer's captive portal. The version we tested does not let you use your own certificate authority or a well-known trusted certificate authority to sign the SSL certificate. Without a trusted certificate authority, you're asking people to connect to your network and give their user name and password to an unauthenticated system they don't know — not the best idea under any circumstances. Nevis says it is adding the capability to use your own digital certificate and certificate authority in its next release.

Captive portals generally are fine for hotels and hot spots, but aren't a particularly user-friendly approach for authenticating to enterprise networks. For this reason, LANenforcer lets the network manager enable self-registration, in which LANenforcer remembers the media access control (MAC) address of an authenticated user for some configurable period of time (eight hours to one year) and doesn't require reauthentication. Our tests show that while this feature works perfectly, it's not a universal remedy for the problems associated with captive portals. Because MAC-based authentication offers such poor security — MAC addresses are easily stolen and spoofed — the self-registration approach takes an intrusive authentication method and significantly weakens an overall security model.

ConSentry has a better approach to the authentication problem: passive authentication as an alternative to a captive portal. If users are logging into a Windows domain or are using 802.1X authentication for wireless or wired LAN

access, LANShield watches that authentication pass through and infers the identity of users (in the case of Windows logons) or the groups they belong to (in the case of 802.1X authentication).

In our authentication testing, we found problems in both products. LANShield initially wouldn't work with our Funk (Juniper) RADIUS server (the problem was fixed with a newer version of the software), and LANenforcer has design issues and bugs related to the assignment of groups from RADIUS and Lightweight Directory Access Protocol (LDAP) servers. If you are using a Windows Active Directory server for authentication, you should be fine with LANenforcer, but our tests show you may not be able to assign group membership from LDAP or RADIUS even with common, off-the-shelf configurations.

We also were disappointed to see that when Nevis' LANSight Security Manager is used to configure devices, all authentications are proxied by the LANSight server. This makes for a frightening single point of failure, because the management server is simply a Linux server. We discovered this issue when our LANSight server lost communications with LANenforcer, losing most configuration information and requiring a reinstallation and reconfiguration of LANenforcer.

Once a user is authenticated, the ConSentry and Nevis boxes need a way to assign the right security enforcement policies. ConSentry maps each user to a single role using a flexible system that includes everything from the authentication group to time of day, to access method. Nevis has a less flexible system, assigning roles based on the group returned from the authentication server. However, if you are using LDAP for authentication and a user is in multiple groups, Nevis has a well-designed system for merging different security policies. This capability will be extremely attractive to network managers who want to have very fine-grained security enforcement scaled to a large number of groups, because Nevis lets each group have a more precise policy.

Endpoint security-posture assessment

A key driver for NAC in many enterprises is endpoint security: evaluating the posture of devices connecting to the network and restricting access to devices that are not in compliance with corporate policies. ConSentry and Nevis address this requirement, but not to a satisfactory degree.

Nevis' approach to endpoint security with the LANenforcer is to use an ActiveX control pushed down to the user's PC (assuming Windows and Internet Explorer are running and there are Administrator privileges) that checks for operating-system patch levels and the presence of antivirus and antispyware software. Because the principal Nevis authentication method is a captive portal, endpoint security evaluation happens during the logon sequence as the Web page is loaded. Failure to pass these checks can land you in a quarantine state for user-directed remediation; LANenforcer also can be configured to require periodic reevaluation while the user is logged in.

Unfortunately, using LANenforcer's self-registration facility to avoid going through the captive portal for authentication means there's no opportunity for LANenforcer to push down the endpoint security posture assessment tool. In our testing, we ran into a problem: The Nevis endpoint security

See NAC test, page 60

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NAC test

continued from page 58

tool insisted that we needed a particular patch for our Windows XP laptop, while Microsoft Windows Update Service didn't agree or offer that particular patch. This wasn't as big a problem as were the Nevis interface's opacity and lack of configuration controls. Once we discovered the problem, there was nothing we could do about it, because LANSight can't see the required patch list or manually update or override it.

ConSentry's approach in its LANShield is almost identical to Nevis', with similar limitations. ConSentry has teamed with Check Point, selling Check Point Integrity Clientless Security as the integrated endpoint security-posture assessment tool. Check Point's Integrity tool is more sophisticated than the Nevis endpoint security tool. For example, it checks for spyware, not just the presence of antispyware software. And you can use it to add other types of checks to your policy. This ConSentry-Check Point combination also supports a wider variety of client platforms, including older versions of Windows and both Java and ActiveX versions of the endpoint security tool.

Even with a more sophisticated client-posture assessment tool, ConSentry and Nevis have the same issue: The user has to go to a Web page to download the tool. With a captive portal, the interface is as clean as Nevis', but when you are using one of the ConSentry LANShield passive authentication methods (such as watching a Windows domain login), there's no Web page involved. In that case, LANShield can intercept the next Web connection the client makes and push down the endpoint security tool, but there's no guarantee users will use their Web browser.

Intrusion prevention plays a role

Both Nevis and ConSentry are aware of the issues surrounding endpoint security-posture assessment and their particular topologies. One solution might be to have an installed, proprietary client that handles both authentication and posture assessment; this is the approach the Cisco NAC framework uses. ConSentry says it is developing its own client, while Nevis is considering adding a client to strengthen its posture assessment.

A second solution would be to add intrusion-prevention capabilities into the products, identifying and quarantining (or blocking) systems that are infected with malware. This approach is more successful than traditional endpoint



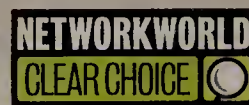
Nevis has chosen to emphasize the IPS nature of its LANenforcer controller as much as its NAC features. The product has a well thought-out set of IPS features designed to catch malware and internal worms.

security assessment, because it is inherently cross-platform and nonintrusive, and has a better chance of detecting a compromised system. After all, having an antivirus engine installed with up-to-date signatures says nothing about whether you're infected with a virus. ConSentry and Nevis both have gone down this path, with Nevis taking the lead in building a sophisticated IPS into LANenforcer.

The Nevis IPS, marketed as Threat Control, is a combination of three IPS technologies: protocol anomaly detection, traffic anomaly detection and specific malware signature-based detection. Because LANenforcer sits between users and corporate resources, the IPS feature set focuses on specific, internal-network types of threats. For example, worm

NetResults

Product	LANShield CS2400 Controller V2.2 and InSight Command Center
Vendor	ConSentry Networks www.consentry.com
Price	\$28,500 for LanShield and \$8,000 for InSight.
Pros	Excellent policy definition tools; versatile authentication and enforcement options.
Cons	Weak intrusion-protection system (IPS) functionality
Score	3.78

**LANenforcer 2024 V2.0 and LANSight Security Manager**

Nevis Networks www.nevisnetworks.com

Price	\$35,000 for LANenforcer and \$7,000 for LANSight.
Pros	Network security visibility; role assignment versatility.
Cons	Policy definition clumsy; captive portal authentication only real option.
Score	3.35

The Breakdown

	ConSentry	Nevis
Authentication/authorization 20%	4	3
Endpoint security 25%	3.5	3.5
Enforcement and IPS 25%	4	3.5
System management 20%	3.5	3.5
Stability/maturity 10%	4	3
Total score	3.78	3.35

Scoring Key:
5: Exceptional;
4: Very good;
3: Average;
2: Below average;
1: Subpar or not available

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containment is a big piece of the picture, with dozens of settings that can be used to adjust thresholds if the defaults don't work. Threat Control provides the option of triggering actions on LANenforcer itself, such as blocking all traffic from a misbehaving IP address for some period of time.

We had mixed success with Threat Control's threat-mitigation features. When we set loose SQL Slammer — the canonical out-of-control worm — on our network, Nevis found and isolated it and raised an alarm. However, when we installed NetRaider, one of the backdoor Trojan horse applications used by hackers to take control of a system, LANenforcer didn't see it, even though there are two signatures for NetRaider enabled in the LANSight management system. (Like many proprietary IPSs, the signatures are opaque, so we couldn't debug why the LANenforcer missed our Trojan horse.) We also found a bug when we turned on sequence number randomization, a common firewall obfuscation technique, because the Nevis box then refused to let anyone on the network.

LANShield has a much less sophisticated IPS feature set, with no configuration capability other than the ability to turn it on or off. ConSentry labels its IPS features as malware protection. To the network manager, it will be a black box. Although LANShield did identify and block our SQL Slammer worm, we wouldn't feel comfortable setting loose such an undocumented and uncontrollable feature in a real network. For now, LANShield's malware features should be considered more of a promise of things to come than a fully baked capability.

Enforcement

The huge advantage that both of these products have over most other NAC solutions is their enforcement capabilities, based on full stateful firewalling. Rather than be content with putting different users on different virtual LANs (VLAN) — the most commonly bandied-about NAC strategy — Nevis and ConSentry give the network manager not only very fine-grained access controls, but also stateful firewalling. This puts ConSentry and Nevis in a very small circle of such vendors as Juniper and Vernier that are advocating such a high level of security.

We did not validate exhaustively the correct enforcement by either firewall, but we did discover that neither LAN-

enforcer nor LANShield has common application-layer gateways within its enforcement capabilities. This means that protocols requiring an application-layer gateway — for example, FTP or VoIP using Session Initiation Protocol and Realtime Streaming Protocol — aren't supported directly. You can still run these protocols through the devices, but your policy will have to punch bigger holes in the firewall to support them, and you won't have the same level of control. Because these products are designed for internal use with primarily trusted users, this doesn't seem an unreasonable restriction.

While the basics you'd expect in any firewall — source or destination IP addresses, subnets and network zones — are present, ConSentry has gone further than Nevis in providing powerful enforcement rules. For example, you can define enforcement rules in terms of Common Internet File System or FTP file names or HTTP content types, something ConSentry calls application filters. These filters are a good start, although there are some big gaps. For example, you can't write a filter based on an HTTP URL.

LANenforcer has an enforcement vocabulary that's closer to a traditional firewall, with enforcement rules expressed in terms of destination IP addresses and services.

Management

Both LANenforcer and LANShield are manageable via a command-line interface (CLI), but we tested them using the separate management tools provided. With Nevis' LANSight Security Manager, we only had to touch the CLI for installation and debugging. ConSentry's graphical management tool is nearly as complete, but not all the product's functionality is available from that interface. We had to dive into the CLI a number of times during initial setup for some of the basic configuration elements.

LANSight has its good and bad sides. Its monitoring system is well designed. With only a few clicks, we found it easy to get an idea of who is logged on, see their policy, log them off, and look at where traffic is flowing. Once LANenforcer is configured, LANSight gives you a quick overview of what is happening.

The bad side is that it's slow. The problem does not seem to be the management tool itself, but the choice of Adobe

See NAC test, page 62

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HP Innovation

*Part of the 12,000-ton CMS particle detector
at CERN, Geneva, Switzerland*

NAC test

continued from page 60

Flash for displaying the GUI. On our dual-CPU, 2.3GHz management client, going from screen to screen took between four and 10 seconds — just long enough to be frustrating.

Where LANsight really fell down

was in configuration tasks, such as the creation, replication and configuration of enforcement policies. Because the whole point of these systems is to give administrators the ability to apply better enforcement to users, this is a significant problem. For example, suppose you wanted to define

access to printers (or Web servers or file servers — anything you want to consider as an atomic unit from the point of view of policy). If the printers are not all in consecutive IP addresses, you would have to create dozens or hundreds of policies, one for each printer, rather than making a sin-

gle policy covering all printers. The management system should facilitate the implementation of the enterprise security policy, not discourage it.

ConSentry's InSight Command Center has a good monitoring system, with superior visibility into what is happening on the

network in terms of both security and bandwidth. With a Java-based GUI, we found its performance to be snappier overall than LANsight's.

InSight's policy configuration was very well put together. Although the difficulty of configuring a firewall with policies for every user seems a daunting task, InSight has the right level of abstraction and object-oriented design to make it easy to match the configuration with the policy we wanted.

Where InSight disappoints is in basic human-interface design and in consistency. For example, when you click on something, you may or may not see what the current configuration or properties are — unless you select to edit that item, and then you can see them all. But the design is inconsistent, and sometimes you see details without having to edit the object. InSight also has a clumsy way of managing configuration versions. ConSentry wanted to be able to define configuration and push it to a device all at once, but the mechanism to do that more often will frustrate and confuse, rather than simplify the process.

Conclusion

Network managers looking for tighter access control than the usual VLAN switching allows, should keep ConSentry and Nevis on their radar screens, in addition to veterans Juniper and Vernier, which also offer products in this particular NAC space. ConSentry's LANShield offers great flexibility in deployment and an outstanding design for policy management in its GUI, although it has limited sets of malware protection. Nevis' LANenforcer brought a broad set of intrusion-prevention capabilities to the table, but design flaws and bugs in critical functions made for disappointing test results. The pace of change for both start-ups is fast and furious, and the issues we found in testing these versions may be a thing of the past before this time next year. Like wine and cheese, both these should improve with age.

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CLEAR CHOICE TEST

Storage management

HP, Symantec SRM wares hit on discovery, inventory tasks

Both could use some work to deliver more advanced storage mgmt. features.

BY LOGAN HARBAUGH

Storage resource management means many things to many people, vendors and IT folks alike. In theory it covers everything from autodiscovering storage-area network devices to alerting and reporting on enterprisewide storage trends; from providing specific inventory control measures to supplying comprehensive management for the entire SAN; from enabling storage capacity management to assisting in information life-cycle management and storage provisioning tasks.

In this Clear Choice test we targeted products that cover most of these storage-management bases in a heterogeneous environment. To that end, we sought to include the following products: Brocade's Fabric Manager, Cisco's Fabric Manager, CA's StoreAge, Commvault's Storage Manager, EMC's SAN Manager, Hitachi's HiCommand Storage Services Manager, HP's Storage Essentials Enterprise Edition, IBM/Tivoli's Storage Manager, Softek's Storage Manager and Symantec's Veritas CommandCentral Storage.

Only HP and Symantec took up the gauntlet. Hitachi's software runs only on its hardware, and company officials said they didn't have a system small enough (less than 7U) to meet our lab criteria. EMC said it has a new version of its product coming out in early 2007 and may let us test that when it's available. Commvault said its product has more of a focus on backup storage software. Brocade agreed to participate but then changed its mind and pulled out of the test before sending the product to our lab. The rest declined to participate.

Overall, HP's Storage Essentials Enterprise Edition scored slightly higher than Symantec's Veritas CommandCentral Storage to earn the Clear Choice award, though the differences between the two are slight. HP supports more devices on the SAN, particularly in the area of storage from smaller vendors such as Xiotech and 3Par. HP is also more scalable due in large part by its underlying Oracle database. Symantec has a simpler installation process (see installation story at www.nwdocfinder.com/6324), with a single product to install rather than three, but may not be as scalable in large installations, because the database isn't set up on a separate server (this would only be an issue in very large SANs). Veritas CommandCentral Storage's ability to gather information via the command-line interfaces of storage devices and switches is more of a chore to configure but allows the administrator to add unsupported devices by adding the commands for those devices manually. Because both products are comparable in starting price at

\$25,000 for Symantec's and \$30,000 for HP's, the biggest dividing line for administrators will be which supports more of the devices in use at your organization.

These management systems are complex. They comprise management software as well as agents running on storage-attached servers with various operating systems. They include a database for storing performance statistics on storage and SAN utilization, and information on the number and types of files, as well as optional applications that provide services such as virtualization and the ability to collect data from enterprise applications such as Exchange or databases. The SANs they monitor and manage can be equally diverse, including host bus adapters (HBA), Fibre Channel switches, storage subsystems, the operating systems on the servers attached to the storage, and possibly even applications accessing the storage. (See details on how our test bed was built, www.nwdocfinder.com/6325.)

The Storage Management Initiative Specification (SMIS) of the Storage Networking Industry Association, which has been adopted as a standard by ANSI, provides a universal interface to query and manage SAN devices. But it has not been widely implemented in new devices, and older devices don't support it at all. So many management applications communicate with SAN devices through the APIs published by the vendor, which means that smaller vendors may not be supported by a given management application. In our test bed, both management products, while theoretically SMIS compliant, used their own switch, storage and HBA proprietary APIs to communicate with devices rather than using SMIS queries.

Our testing required that both products autodiscover a SAN comprising a total of nine HBAs from QLogic and Emulex, two QLogic Fibre Channel switches, Nexsan SATABlade and SATABeast storage arrays, Windows 2000 and 2003 servers, and RedHat ES 3.0 and 4.0 and SUSE Linux 10 servers. The IP network had three segments in a simulated WAN configuration and two SAN segments using

logical unit number (LUN) masking.

Both HP's and Symantec's products did well in discovering SAN devices and providing basic inventory of our SAN. Both discovered and correctly identified all the devices on the SAN in less than a minute.

However, getting the products to go beyond discovery and supply some actual management of the devices was bumpier. For example, neither product would manage the Nexsan storage systems to do tasks such as creating partitions, expanding storage or setting up LUN masking. Also, neither was able to manage all of the HBAs. HP's offering was unable to manage the two oldest QLogic and one of the Emulex HBAs, while Symantec was only able to manage five out of nine HBAs. The point is to peruse carefully the compatibility charts before you begin. (See those charts for HP and Symantec, respectively, at www.nwdocfinder.com/6322 and [6323](http://www.nwdocfinder.com/6323).)

Both products require agents to sit on Linux systems to gather management data from storage attached to those systems. For storage tied to Windows systems, agents are required to collect information not gathered by the Windows Management Interface, a built-in tool that can gather statistics on, for example, file-system use and throughput of network devices. The bottom line is that these systems are much like network management systems, requiring a fair amount of assembly and tuning.

What follows are the detailed observations collected about each product during testing.

HP's Storage Essentials Enterprise Edition

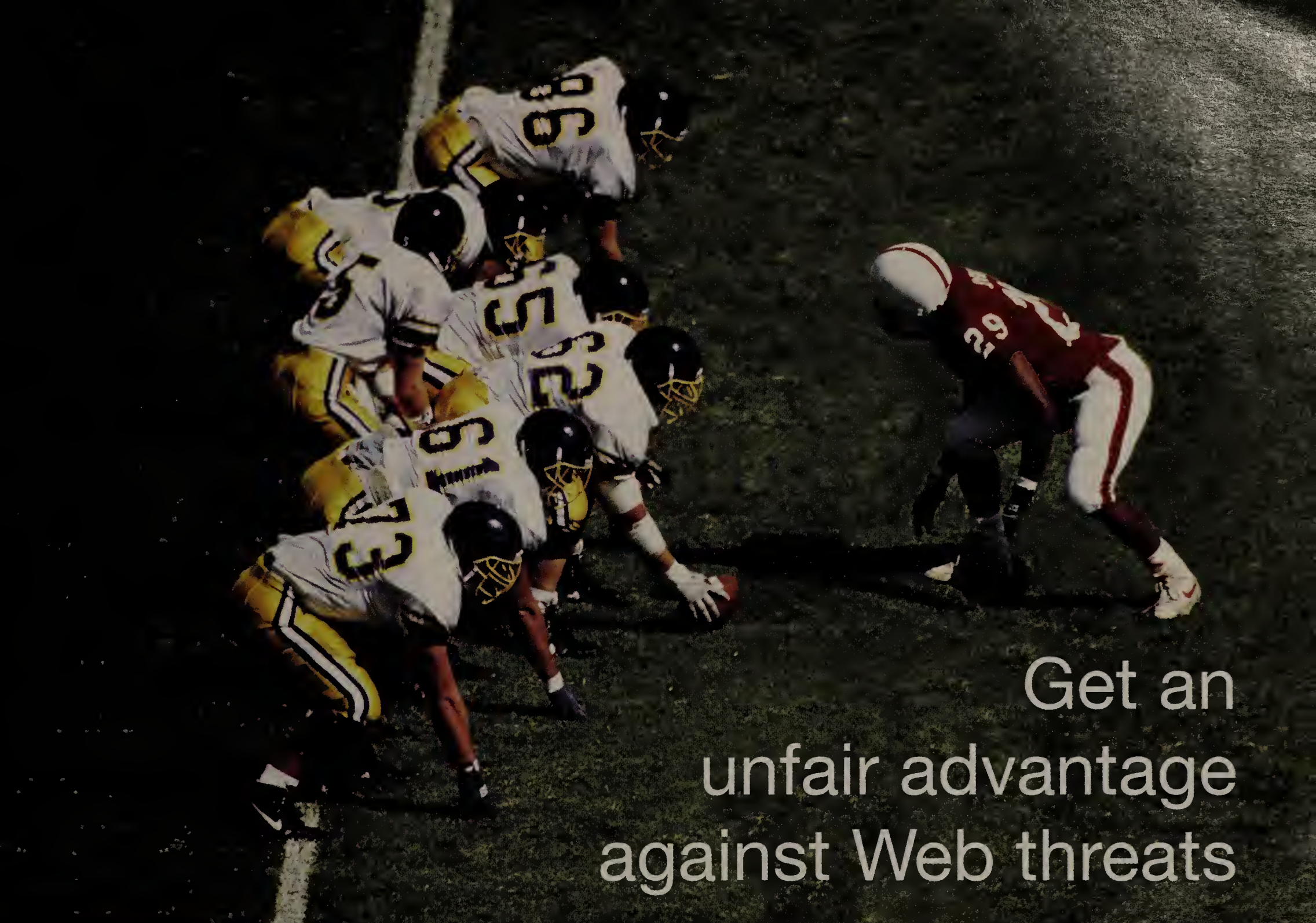
Storage Essentials is not really one product, but a family of products. The Enterprise Edition includes Storage Essentials, Storage Insight Manager (SIM), a software connector piece between the two pieces of software, and an Oracle database server. Each of these pieces is installed separately, and once all are set up, the whole is nicely integrated and fairly seamless to use.

Discovery is quick and works well across an entire multi-network Windows domain, as long as permissions are set up correctly. Storage Essentials provides detailed visibility into HBA, switch and storage configuration, showing all the same information you'd get from the dedicated management utilities provided by the manufacturers, such as network names and worldwide names and numbers, port connected to, LUN masking information and speed of interface supported and in use. The storage-specific information it garners included size of volume, number of files, space used, space free and types of files, as a few examples. It can also use optional application modules to get storage-related information such as the size of the database, storage used by each user, or system latency from applications such as Exchange and a variety of databases. We did not test these modules.

Storage Essentials can manage a great variety of devices in many ways. As long as you're not trying to run unsupported devices, you can have a single console for tracking storage inventory, receiving alerts and conducting management for the entire SAN.

A topology view in the console gives you a visual representation of the overall SAN, showing interswitch links, redundant and offline connections, each device on the SAN, how they're connected to each other, with what kind

See SRM, page 66



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SRM

continued from page 64

of connection (1G/2G/4Gbps connection), the name of each device, the type of server each HBA is connected to, and what type of switch or storage is connected. The capacity manager tool lets you view overall disk space in use for the entire SAN as well as direct-attached storage on servers, and gives you a means of setting alarms for items such as volumes that are low on capacity, having all ports in use on switches, links that are running at full bandwidth capacity, ports, switches or storage that have failed or aren't responding as quickly as they should.

The performance analysis and monitoring tools provide a view of the SAN's historical trend data and lets you set alarms if SAN bandwidth utilization exceeds thresholds or if server queue lengths, memory utilization or other benchmarks are too high. The alarms that we tested all worked, and offer great detail (there are hundreds of possible alarms to set). The HP SIM software allows you to set policies that will e-mail you if thresholds are crossed, or even execute scripts to add capacity to a volume or limit the amount of space a user can fill. Scripting is limited to the imagination of the administrator — any of the thousands of management tasks that can be accomplished through the GUI can be scripted. Basic scripts were easy and straightforward to set up, and there are testing tools that allow you to see the results of a running script before you put it into production.

If you get an alert, Storage Essentials provides some effective troubleshooting tools that allow you to discover what storage is visible from a given server without having to access the server directly, for example, reporting on whether an EMC storage array that is connected to the SAN is available to the server. Additionally, you can poll HBAs and switches to make sure they are properly configured and operating correctly and then roll configuration changes or software updates out to all devices on the SAN if necessary. We were able to roll out configuration changes automatically to the switch and HBAs, and while you would want to carefully debug a deployment, the basic process is straightforward.

Storage Essentials provides role-based security, giving lower-level administrators self-service storage in their domain without granting access to the entire SAN. This feature also lets you easily transfer administrative rights from one administrator to another without having to create new accounts. Reporting tools are excellent, easy to use and powerful. Reports can include any of the thousands of details that the agents collect on the SAN, from user statistics, average utilization by port number to SAN storage utilization. You can organize the data in any way you like from columnar text to fancy bar graphs.

Symantec's Veritas CommandCentral Storage

Once completely installed, CommandCentral Storage provides a single window into the SAN, giving you the ability to discover and manage SAN devices and file servers, as well as set alerts and access reporting tools. With additional optional modules, CommandCentral Storage can provide in-depth reporting and management of file servers, Microsoft Exchange, databases on Linux (not Windows) and storage virtualization. In addition to the Veritas Security Service logon, which controls access to the Veritas Command Central Storage application as well as any other Veritas storage applications on your network, you can configure the server to use SSL rather than HTTP to access the system, though this is not the default setting.

Discovery of the devices on the SAN and servers with agents installed was quick and painless. As with the HP product, visibility into detailed configuration parameters was simply a matter of right-clicking on an object to get

NetResults

Product Storage Essentials Enterprise Edition

Vendor	HP http://h18006.www1.hp.com/products/storage/software/e-suite/index.html
Price	Starts at \$30,000.
Pros	Discovers a wide range of arrays and devices; Oracle database makes the product quite scalable.
Cons	Install is more complex.
Score	4.6



Veritas CommandCentral Storage 4.3

Vendor	Symantec www.symantec.com/about/news/resources/index.jsp
Price	Starts at \$25,000.
Pros	Easy to install; good reporting tools; can manually add management of nonsupported devices via CLI interface.
Cons	CLI administrative setup is complex, but offers potential support for more devices.
Score	4.4

The Breakdown

	HP	Symantec
Installation 20%	4	5
Discovery 20%	5	4
Management of SAN 20%	4	4
Reporting 20%	5	5
Scalability 20%	5	4
Total score	4.6	4.4

Scoring Key:
5: Exceptional;
4: Very good;
3: Average;
2: Below average;
1: Subpar or not available

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Detailed data on SRM in Network World Buyer's Guide.
www.nwdcfinder.com/1042

more details, including switch, port and configuration parameters. The console can autodiscover devices connected via Fibre Channel or let you manually inventory devices over an IP network using SNMP. The autodiscovery option serves up basic information on any SAN-connected device — for full information and manageability, you need to install agents on server-connected devices, then manually add those hosts to the list of connected servers. The system will not autodiscover and add systems with agents; you have to manually add the agent host names to the list first or browse for available agents and tell the console to connect to them. The SNMP method requires some preliminary configuration, using the appropriate server or device logons and passwords, which is not a limitation of the Veritas CommandCentral Storage but a limitation of SNMP, which doesn't broadcast any information until after logon.

Once server agents have been added and SNMP configured, administration of the SAN, including setting alerts, running reports or managing any of the available configuration settings on devices can all be accomplished easily, although not quite as transparently as with the HP product. On the other hand, the availability of SNMP management allows for some control over storage devices that aren't directly supported via APIs. For example, we were able to manually configure CommandCentral Storage to administer the Nexsan storage through the command line management interface provided by Nexsan, although each management command had to be entered manually and saved. This would only be useful if you had a large number of identical devices on the SAN, because each command for each device has to be saved separately.

CommandCentral Storage includes the same types of tools for capacity planning and historical-trend-data gathering as HP's products. You can gather historical data on any aspect of the SAN from switch or port utilization to amount of space free on a volume, and see trends over time. You can also set up policies that can be applied across all devices of the same type (setting up all switches to use 1G or 2Gbps connections, for instance).

The variety and flexibility of reporting tools, trend analysis and setting of alerts is enough to support pretty much

any desired task, including chargeback and storage reporting and management. For instance, you can set up a group containing all the users in a department and then identify how much storage each department uses, so that you can bill each department in the organization for its share of the cost of storage.

Like Storage Essentials, CommandCentral Storage supports role-based administrative user accounts, so accounts can be easily transferred from one administrator to another. Therefore, one administrator can be assigned administrative rights over only the portion of a storage array available to a given server, for instance, so that local administrators can handle storage for their servers without needing access to the rest of the SAN.

Conclusion

Both of these products will appeal to SAN administrators. Each has characteristics that an administrator may consider to be pros or cons, depending on their needs. For example, HP's more cumbersome multiproduct installation makes initial setup harder, but the dedicated Oracle database can be run on a different system than the data collector, making the system more scalable than the Symantec system. Likewise, the Symantec system requires more manual configuration to use SNMP and to enable management of some products, but this system also allows administrators to manage systems that aren't directly supported via an API. HP has a complex pricing system that takes into account the number of devices and applications managed and the number of terabytes of storage managed, while Symantec bases pricing on number of servers, with additional costs for some features.

Either of these products can be installed and configured to inventory a SAN, manage devices, send alerts and create reports, and should quickly recoup the cost of the software in savings of administrator time over the old spreadsheet inventory system and 18 management applications.

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Tech execs lengthen tenure

Today's CIOs are sticking around longer because they contribute to the business.

BY LAUREN GIBBONS PAUL

Good news for CIOs: Tenure in the top IT spot has lengthened over the last few years, hitting an average of 3.6 years, according to a recent Society for Information Management survey.

The "State of the CIO 2006" survey from *CIO* magazine (a sister IDG publication of *Network World*) takes an even more bullish view, citing an average tenure of nearly five years. These findings are more optimistic than the 18-month figure that was widely quoted as a CIO's average longevity just a few years ago.

What's behind the longer stays on the job? CIOs have found ways to extend their sphere of influence beyond IT, says Sam Marwaha, a New York principal at consultancy McKinsey & Co. For example, one of Marwaha's CIO clients had extensive work experience in a low-margin industry. When he changed to a higher-margin industry, he took over the running of corporate shared services (including HR, procurement and facilities management) in addition to heading up IT. "He's part of delivering standard business infrastructure services. That will lengthen his stickiness to the organization," he says.

Because technology is an integral part of business processes and functions, in many organizations it is second nature for the CIO to take ownership of process improvement initiatives, such as Six Sigma. "As processes are based more on technology, CIOs can own them. This links the CIO much more tightly to the business, with the potential to have a faster impact," says Paul Wilmott, a McKinsey principal.

Successful CIOs are involved outside IT to such a degree today one wonders if the role will endure as a separate entity. Another McKinsey client has taken over responsibility for delivering innovation to the business. "Having a CEO-level mandate to drive business innovation gives an ability to be migrated into the lines of business," Wilmott says. Many CIOs are crossing from technology into business lines and back again, making it even more possible for them to communicate with their business counterparts, as well as to execute initiatives aligned with business goals.

When Tom Shelman assumed the CIO mantle at Northrop Grumman almost a decade ago, he had a strong business track record. Northrop had just acquired Shelman's employer. To his surprise, the Los Angeles-based global defense company offered him the position of CIO and vice president of technology. Though Northrop's revenue at the time was about \$6 billion, not today's \$30 billion, Shelman was overwhelmed. Outlasting the industry-average CIO tenure was not high on his radar screen.

"My first year I was drinking from a fire hose. We had industry downsizing and brutal budget reductions," Shelman says. By the second year, he felt more comfortable and ready to roll with whatever changes the job would bring. "It hasn't been the same job any two years," he says. Shelman has succeeded in underspending his IT budget year in, year out, even as the business has grown rapidly.

"Now I have VPs under me who are in charge of businesses as large as the one I headed when I became [corporate] CIO," says Shelman, who attributes his longevity in part to his willingness to be judged alongside every other business leader. "I have a commitment to take out costs or produce increased margin," he says.

A shift in metrics

Traditionally, CIOs stumble when it comes to the metrics by which they are judged, Marwaha and Wilmott say. Today, even CIOs at large companies typically are measured by their ability to slash IT costs. "The only thing they usually get measured on is the cost of IT. That's why [CIOs] have to say no to things," Marwaha says. That's often the root of the disconnection between IT and the business. If CIOs' performance is measured on such things as process improvement and number of business innovations, on the other hand, their worth to the business will be clearer.

The trick is to reframe the dialog to deemphasize the importance of cost savings so IT is measured on its ability to affect the bottom line. "We have seen CIOs successfully engaging senior management and convincing them they



Tom Shelman has longevity at Northrop Grumman, where he has held the CIO role for nearly 10 years.

should be measured on different things," Marwaha says.

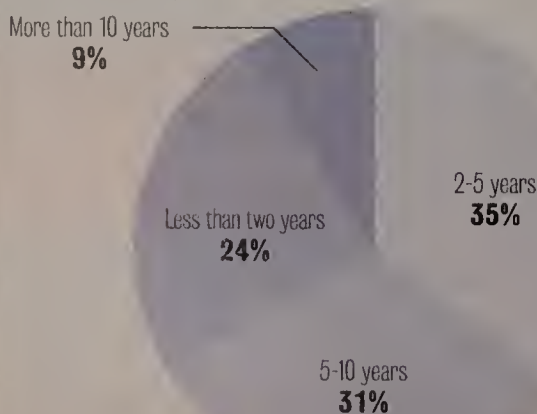
Another factor contributing to greater stability in the CIO position is the end of the last boom-bust cycle at the end of the 1990s and the beginning of the 21st century. "You saw high turnover during the dot-com upswing and downswing. During the boom companies thought they needed a whole new animal to run IT. In the downturn, they thought they needed a cost-based person," Wilmott says. "Businesses have gotten much smarter on who they need in the job. There is an increasing recognition that IT problems are difficult to solve overnight."

For his part, Shelman says he expects to be judged on the same time frame as his business peers. "I'm certainly not planning on taking longer to deliver results than anyone else. If you understand how technology enables the business, you should be able to lead the way on that," he says.

Paul is a freelance writer in Waban, Mass. She can be reached at lauren.paul@comcast.net

CIO tenure

According to a survey of 500 CIOs by *CIO* magazine, the average tenure is 4 years, 11 months. Here's how long the IT execs have remained in their current positions:



* Total doesn't equal 100 because of rounding.

SOURCE: *CIO* MAGAZINE 2006

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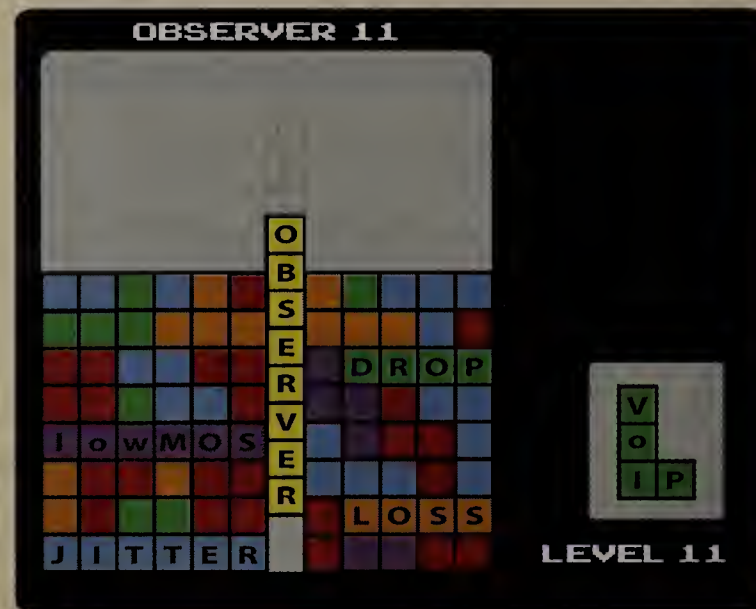
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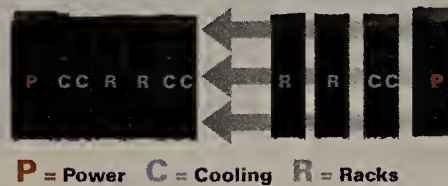
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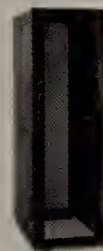
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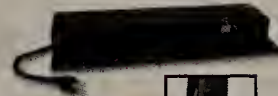
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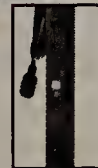
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NETWORKWORLD

■ Editorial Index

■ A		
Advanced Micro Devices	16	
Alcatel-Lucent	6	
Alltel	6	
Apple	1, 6	
AT&T	1, 6, 22, 34, 57	
Azul Systems	16	
■ B		
BMC Software	56	
Brocade	64	
■ C		
CA	20, 24, 56, 64	
Check Point	10, 24, 60	
CirBA	20	
Cisco	1, 22, 28, 30, 60, 64, 76	
Colasoft	40	
Commvault	64	
ConSentry Networks	58	
Crossbeam	24	
Cryptolex Trust Systems	12	
■ D		
Dell	6, 14, 28	
■ E		
EMC	6, 24, 64	
Emulex	64	
■ F		
Fair Isaac	12	
Fiberlink	22	
Foundry Networks	22	
F-Secure	20	
■ G		
Good Technology	40	
■ H		
Hitachi	64	
HP	6, 14, 20, 24, 64, 76	
■ I		
IBM	5, 14, 20, 24, 56, 64	
Infonet	22	
Intel	5, 8, 10, 14, 16	
iPass	22	
■ J		
Juniper	10, 24, 28, 58	
■ L		
Level 3	6	
Liquid Machines	12	
■ M		
McAfee	76	
MCI	22	
Microsoft	1, 20, 24, 36, 40, 78	
■ N		
NEC	22	
Network Appliance	8, 24	
Nevis Networks	58	
Nexsan	64	
Nortel	24	
Novell	8, 20	
■ O		
Opware	20, 56	
■ P		
Parallels	78	
ProfitLine	34	
■ Q		
QLogic	64	
Quickcomm	34	

■ R		
Red Hat	20, 28, 64	
Revivio	24	
Rivermine	34	
■ S		
ServGate	24	
Softek	64	
SonicWall	24	
Sprint	6, 22, 40, 57	
Storactive	24	
Sun	16, 20, 28	
Symantec	8, 16, 20, 24, 64	
Symphony Spend Mgmt.	34	
■ T		
3Com	24	
3Par	64	
Tangoe	36	
TeleNav	40	
T-Mobile	57	
■ V		
Vanco	22	
Verizon	6, 34, 40, 57	
Via Technologies	5	
Virtela Communications	22	
VMware	20, 78	
Vyatta	28	
■ W		
WatchGuard	24	
■ X		
Xiotech	64	
X-Tek Systems	76	
Xyzel	24	

■ Advertiser Index

Advertiser	Page #	URL
AT&T	25	att.com/networking
Adtran	79	www.adtran.com/ipt
American Power Conversion	73	www.apc.com
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Barracuda Networks	13	www.barracuda.com/nww
Canon USA Inc.	26-27	www.usa.canon.com/isg/whatsnextforcolor
Citrix Systems Inc.	37	citrix.com
dtSearch	72	www.dtsearch.com
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Fluke Networks	46-47	www.flukenetworks.com/48hrs
Foundry Networks	35	www.foundrynet.com/sie
Gateway	15	www.gateway.com/programs/servers
Hewlett Packard	41	www.YouAlwaysHadIt.com/cool4
Hewlett Packard	61	www.hp.com/go/procurve/CERN3
High Density Hosting Inc.	72	www.hidho.com
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IBM Corp.	31	ibm.com/takebackcontrol/info
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Internet Security Systems	23	www.iss.net/proof
Inter-Tel	52-53	www.inter-tel.com
Juniper Networks Inc.	4	www.juniper.net/LIAC
Leviton Telecom	62	levitonvoicedata.com
Linksys	7	www.Linksys.com
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Microsoft Corp.	17	microsoft.com/bigdata
*Microsoft Corp.	43	www.EHStrial.com
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Netcordia	54	www.netcordia.com
NetSupport Inc.	71	www.netsupportmanager.com
Network Instruments LLC	70	www.networkinstruments.com/analyze
Network Instruments LLC	72	www.networkIAPs.com
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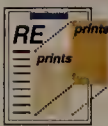
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Rose Electronics	70	www.rose.com
ScanSafe Inc.	65	www.scansafe.com
Secure Computing Corp.	44	www.securecomputing.com/goto/sslblindspot_ad
Sensaphone	72	www.ms-4000.com
Siemens	48-49	www.siemens.com/us/open
Siemon Company	54	www.siemon.com
SunGard	77	www.availability.sungard.com/pandemic
Transition Networks Inc.	55	www.milan.com
Ultrium LTO	63	www.ultrium.com/whitepaper
Websense	9	www.websense.com/security

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AT&T	Memory Store.com	
Adventnet	Microsoft	
Belden	NEC Unified Solutions	
Bountiful	Nextel	
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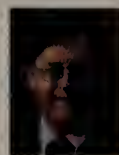
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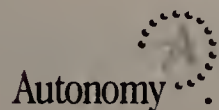


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Ancient calculator secrets revealed

Researchers re-imagine the mysterious Antikythera Mechanism.

BY JOHN COX

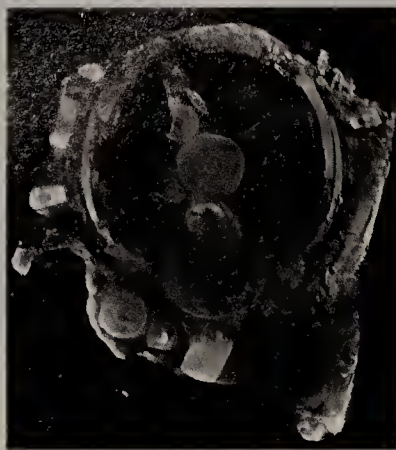
Advanced imaging software and 3-D X-ray tomography have let scientists finally create the most detailed reconstruction yet of a 2,100-year-old astronomical calculator.

The latest research of the Antikythera Mechanism shows it to be a highly sophisticated calculator that could add, subtract and divide by means of a complex and ingenious arrangement of 37 bronze gears. The gear train moved a set of pointers on dials to accurately show the changing positions of the sun and moon (with its phases), and quite possibly of the planets, and to predict solar and lunar eclipses.

Researchers now date its creation slightly earlier than previously thought: between 100 and 150 B.C.

One of the key new findings is the discovery that the device mechanically reproduces the mathematics developed by the great second-century B.C. astronomer Hipparchus to account for the irregular movement of the moon through the heavens.

"This is a mechanical reproduction, by means of a clever [pin-



New 3-D X-rays, such as this one, of the Antikythera Mechanism have let researchers finally piece together how the 2,100-year-old astronomical calculator worked, and decipher its purpose.

and-slot arrangement in the gears] of the so-called first lunar anomaly in Hipparchus' lunar theory," says Francois Charette, a researcher with the Department of the History of Science, Ludwig-Maximilian University, Munich, Germany. Charette authored an assessment of the new research in a story published in the current issue of the journal *Nature*.

"This means that the pin-and-slot device makes the pointer for the moon on the front dial move

at varying speed, following (in modern terms) a mathematical function that resembles more or less a sine curve," Charette says.

The research team speculates that Hipparchus, who lived from about 140 to 120 B.C. in Rhodes, where the mechanism is believed to have been built, or one of his students may have had a hand in its design.

The full research results were announced at a two-day international conference in Athens last week, and published online by *Nature*.

The mechanism, a clockwork-like collection of bronze gears and dials inscribed with Greek text and numbers, has been slow to yield its secrets since being recovered in 1901 from an ancient wreck off the Greek island of Antikythera.

But critical new details of the gears and their relationships, along with nearly 1,000 never-before-seen Greek characters, doubling the total number identified, were revealed by means of surface imaging software recently developed by scientists at HP Laboratories and by an 8-ton, high-resolution, 3-D X-ray machine

from X-Tek Systems, Tring, England (www.nwdocfinder.com/6362).

Those details confirm some previous insights by researcher Michael Wright, based on computer-aided analysis, with the late Allen Bromley of the University of Sydney, Australia, of 700 digitized X-ray plates during the 1990s.

The new research details and conclusions here are drawn from the *Nature* stories, including the paper by the Antikythera Mechanism Research Project investigators.

Roughly the size of a shoebox, the front of the mechanism shows two concentric circular scales, the inner one showing the Greek zodiac with 360 divisions. The outer, moveable scale is the Egyptian calendar, with 12 30-day months plus five days. The outer dial could be moved to adjust for leap years. Pointers show the relative positions of the sun and moon, based on the Metonic cycle of 235 lunar months (the interval between two identical phases of the moon, such as from one full moon to the next) in 19 solar years, Charette says.

A device showing the moon's phase was probably attached to the moon pointer.

On the back of the device are two main dials, one above the other, both using a spiral design (confirming Wright's earlier proposal), whose pointers show time based on two other astronomical

cycles identified by the Babylonians. The upper dial shows the Metonic cycle with a subsidiary dial showing the more accurate Callippic lunar cycle, of 940 lunar months in 76 years (or four Metonic cycles minus one day).

The second dial is for the Saros eclipse repetition cycle, which predicts that a given lunar or solar eclipse will be repeated 223 lunar months later by a similar eclipse.

The researchers now believe the device had 37 gear wheels; seven of those are deduced from the now more visible details of the surviving wheels. And they agree with Wright's speculation that some of the missing gears were likely used to simulate the movement of the known planets, making the Antikythera Mechanism one of the earliest and most complex planetariums.

The Research Project intends to create an online database for continuing study of the Antikythera Mechanism and of the world and minds that created it. ■

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Blogging from Athens

Andrew Ramsey, a computed tomography specialist with X-Tek, blogged about the findings as a member of the team.

www.nwdocfinder.com/6375

McAfee to provide total protection for corporations

BY ELLEN MESSMER

McAfee this week plans to announce the second version of its corporate client security software, Total Protection, a combination of antivirus, antispyware, host-based intrusion-prevention and network access-control policy-enforcement agent.

Total Protection 2.0 adds a feature called SiteAdvisor designed to warn Web users that certain Web sites present dangers by forcing unwanted applications onto the desktop or other perceived risks. Total Protection 2.0 also adds support for Cisco's Network Admission Control (NAC) technology for restricting network access if virus or software patches aren't up to date. The McAfee Total Protection agent can carry out remediation for NAC based on policies controlled via McAfee's ePolicy Orchestrator (ePO) management console.

The SiteAdvisor feature for Web surfing rates Web sites in traffic-light colors green, yellow and red, "for sites known to be dangerous," says Kevin LeBlanc, McAfee group product marketing manager.

The Windows XP version of Total Protection 2.0 will include the full set of security features. However, McAfee will not add the Cisco NAC support for Microsoft's 32-bit and 64-bit Vista operating system, which became available last week, until further testing is completed.

And because of Microsoft's PatchGuard feature in 64-bit Vista, which restricts unauthorized access to the operating system kernel, Total Protection 2.0 for that platform will not include the host-based intrusion prevention.

In addition, some features in McAfee's antivirus scanning will not be included until Microsoft makes available a set of APIs expected in Vista Service Pack 1.

"There are changes because of 64-bit PatchGuard," LeBlanc says. But he added McAfee believes Microsoft is "on track" with providing the necessary APIs to the security industry.

Pricing for Total Protection 2.0 starts at \$93 per seat based on 100 users. ■

■ **Network World**, 118 Turnpike Road, Southborough, MA 01772-9108, (508) 460-3333.

Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #41321518. *Network World* (ISSN 0887-7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by Network World, Inc., 118 Turnpike Road, Southborough, MA 01772-9108.

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Nonqualified subscribers: \$5.00 a copy; U.S. - \$129 a year; Canada - \$160.50 (including 7% GST, GST#126659952); Central & South America - \$150 a year (surface mail); all other countries - \$300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

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BACKSPIN Mark Gibbs

Hell yes to virtualization!

I don't want to keep beating up on Microsoft; I really don't, but it is particularly hard to avoid doing so at the moment.

The company's ubiquity means that one can't help but notice the sometimes unpleasant, occasionally weird and often downright sleazy things that it does.

The thing that caught my eye this week was the following line in the End User License Agreement (EULA) for Microsoft's Vista Home Basic and Vista Home Premium: "USE WITH VIRTUALIZATION TECHNOLOGIES. You may not use the software installed on the licensed device within a virtual (or otherwise emulated) hardware system." (See page 11 of the EULA at www.nwdocfinder.com/6369.)

Several commentators have concluded that what the EULA really means is you can't install a second copy of Vista Home Basic or Vista Home Premium in a virtual machine, but I submit that is not how a normal consumer would interpret the EULA, nor is that the way Microsoft intends it to be interpreted. Indeed, page 1 of the EULA says: "You may install one copy of the software on the licensed device. You may use the software on up to two processors on that device at one time." That clause covers the multiple-use issue and confirms the intention

of the virtualization prohibition.

What is interesting is that the prohibition on virtualization doesn't apply to the Vista Business and Vista Ultimate versions, so what could be the logic behind this? According to an interview (see www.nwdocfinder.com/6357) of a Microsoft spokesman by ZDNet Asia, "virtualization is a fairly new technology and one that we think is not yet mature enough for broad consumer adoption."

So Microsoft wants to "protect" the consumer? That simply makes no sense. It would be like Microsoft trying to prevent the use of Vista Home Basic or Vista Home Premium to access the Internet because Internet technology is not yet mature enough.

But what does "mature enough" mean? Was Microsoft's Bob operating system mature enough? Was Internet Explorer 6 mature enough? Was Windows 95?

Of course not! But Microsoft was willing to let consumers use them anyway. In fact, it can be argued that no operating system or large application is ever mature enough, because all of them have bugs, omissions and sundry design gotchas that can confound even the most technically proficient, let alone the average consumer.

Secondly, to prohibit consumers from using a product in a manner that doesn't obviously relate to the prod-

uct's core value is ethically indefensible.

The real weirdness clincher is making the prohibition legally binding through the EULA. Microsoft didn't just provide advice to consumers; the company made it so that it could take consumers to court should they be caught running Basic or Premium in a virtual machine. That's the way to build a loyal consumer base!

If Microsoft keeps this clause in the final Vista EULA, I think every right-minded consumer should consider this as an issue of unfair trade practice by the corporate equivalent of a schoolyard bully. Consumers should get themselves a virtualization system, such as VMware or Parallels, and run it with Vista Basic or Vista Premium on principle. If Microsoft decides to take legal action, I think we'll all ante up for the consumer's defense.

Letting Microsoft get away with this nonsense will set a precedent that will come back to bite us in the digital assets, allowing, as it will, software vendors and ultimately hardware vendors to dictate how, when and where we can use their products. The first hurdle will be the consumer market, and the professional market will be next. How hard do you want your job and your life to be?

Bottom line: Just say "Hell, yes" to virtualization.

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NETBUZZ News, insights and oddities

'Gates for president' bandwagon picks up

Paul McNamara

Cartoonist Scott Adams started this flapdoodle with a Nov. 19 post on The Dilbert Blog that suggested there isn't anything wrong with this country that

President Bill Gates couldn't cure in less time than it takes to get a new operating system out the door. Hey, everyone enjoys a good chuckle . . . and don't you just love that Dogbert?

But now Adams has thrown his weight, such that even the best cartoonist can muster, behind a newly launched "Bill Gates for President" Web site — www.billgatesforpresident.net — a site that to my eyes and based on an e-mail exchange with one of its organizers doesn't appear to warrant such an apparently dead-serious endorsement — even from a professional funnyman.

Easiest part first: There is no more chance of Bill Gates running for — never mind becoming — president than there is that the newly separated Pamela Anderson will go running into the arms of Bill Clinton. (No, wait, the chance is *much* less than that.)

Nevertheless, the Bill Gates for president Web site appears reasonably sophisticated, entirely earnest and begs us all to take the idea seriously.

And at least one celebrity has obliged them. In a Dilbert Blog post last Thursday titled "Bill Gates for President," Adams writes: "In an earlier post I said Bill Gates would make an excellent president because he's a successful businessman, makes decisions based on reason instead of superstition, and has a track record of trying to help the poor through his foundation. Apparently I am not alone. There's a new Web site dedicated to getting him elected: www.BillGatesforPresident.net."

"I was amazed at the reaction when I first mentioned the idea. Most of the comments were one of these. 1. I would vote for Bill Gates. 2. Bill Gates did (some evil business thing). . . . The fascinating thing is that even the comments about his evil-doings are FAVORABLE to the concept of Bill Gates for president."

After a bit of explanation and poking mild fun at his own idea, Adams concludes:

"Bill Gates for president — you could say you have a better idea, but you'd be lying.

Are there any pollsters out there who want to see how he stacks up against the field?"

Let's toss Pam Anderson in that field just for fun.

The grass-roots brigade over at Bill Gates for President could only have been more tickled had those words come from Gates himself.

"A little over an hour ago Scott Adams has blown a whole lot of extra life into our ambitious Web site," they write. "Thanks, Scott! It's great to see we're not alone, and we're sure more people will jump on the bandwagon in the next few days and weeks."

Trouble with their Web site — one trouble — is that you can't really tell who's behind it. And if you've spent any time at all trying to separate the serious from the posers on the 'Net, you know that a lack of contact info just about screams run away. They did have a Web form to submit questions, though, so I sent this one:

"Who are you? I ask not to be glib, but because you're asking to be taken seriously, yet you offer no serious contact information on the site. This leads me to guess that you are in no way serious, but are on a lark of some kind. Please let me know."

Surprisingly, I received a reply within minutes:

"Hi Paul: You make a very good point here, and I'll have to consider putting up a list of people who are currently involved with the Web site. I agree on the fact that content is as trustworthy as its source, so I see where you're coming from very well. I will only consider identifying ourselves publicly if we can do it as a collective."

"As soon as I've had the chance to talk to some more people behind this project I will get back to you (I wish I could give you a time frame, but things have been pretty hectic since Scott's blog post). Please don't blow us off for being attention-seekers, though. We are here to provoke thought, not to rant."

The reply was signed, "Kind regards, Bert."

Guess Ernie was busy polishing Bill's first State of the Union Address.

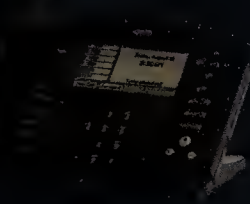
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